Introducing Public Private Partnerships To Implement Natural Resource Management Projects: A Case Study Of The Land User Incentive, Groot Marico

by

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DECLARATION

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ABSTRACT

The study examined the possible introduction of Public Private Partnerships (PPPs) in the development, management and maintenance of ecological infrastructure assets and explores the Land User Incentive (LUI) program in South Africa (SA). PPPs are vehicles for cooperation between a public and private partner to collaborate formally to undertake a particular project or to provide a service. The focus was to explore the possibility to use LUI as a PPP model to provide and improve service delivery in the Natural Resource Management (NRM) sector. In SA and around the globe, the concept of PPPs has been widely used in the development and management of transport and health infrastructure. To date the opportunity and prospects presented by the PPP model in the NRM has not been fully explored.

The use of PPP in the sustainability space gained traction following the United Nation's World Summit on Sustainable Development (WSSD) which took place in SA from 26th August to 4th September 2002 and this was 10 years later after the first Earth Summit held in Rio de Janeiro in 2002. The 2002 conference put development partnerships on top of the development agenda and acknowledged their role in achieving environmental sustainability. The Partnerships for Sustainable Development were framed as voluntary and non-negotiated collaborations between government and different groups which include the private sector. At the United Nations Sustainable Summit on 25th September 2015 (Paris Climate Change Agreement), sustainable development goal (SDG) number 17 on 'Partnerships for Goals, reinforced the need for partnerships in the environmental or sustainable development sector and government and private sectors are amongst key stakeholders.

The Groot Marico LUI in the North West Province was used as a case study to explore how the LUI can be modelled along the principles, practices and framework of a PPP model. The result affirmed that LUI can be used in NRM to provide a public service through the use of PPP as a service delivery vehicle. The study concluded that some level of similarities exists in the way LUI and PPP are implemented and both can be used to improve service delivery which can best be delivered through partnerships.

In order for PPPs to be successful, the regulatory framework should be focused on encouraging the participation of the private sector to contribute towards private sector participation in service delivery. The creation of a legal framework through participatory engagement is necessary so as to ensure needs of all key participants are taken into account and the process is well regulated.

The findings of the study presented the observation that in its current form and structure, the LUI program does not exonerate NRM from the threat of implementing agent's failure. The notion that substantial risk is transferred to the implementing agent is inconsistent with that of partnerships being forged with the land-owners. As a result, the risk still remains with NRM as the primary financier of the clearing projects. By using the private sector as the primary financier, the issue of operational risk would be addressed. Furthermore, NRM would be solely responsible to manage the performance of the implementing agent. It is safe to conclude that since access to ecosystem services is every citizens right as enshrined in the Constitution (RSA, 1996), attempts to implement the LUI as a Co-operative Arrangement type of PPP will require extensive public consultation. NRM should consult widely on this proposal to avoid a possible public uproar. When presenting the proposed model to the public, NRM should focus on the economic value the program will add, and on the environmental and social values.

The study also revealed that the introduction and implementation of the LUI program can contributes towards the success of the government-wide program intervention to address the challenges of poverty and unemployment. The lessons from the case study can be applicable to the rest of the country because LUI is a national program targeted at unlocking opportunities in the NRM sector. Further studies should focus on the overall implications of the introduction of the LUI, as the NRM's very own PPP initiative. Future studies may centre on the future role of both state-run and non-public organizations whose current role is to advocate and conserve ecological infrastructure assets for the benefit of all

OPSOMMING

Hierdie studie ondersoek die moontlike aanwending van Openbare-Private Vennootskappe (OPV) in die ontwikkeling en instandhouding van ekologiese infrastruktuurbates en die gebruik van die Openbare-Privaat Vennootskap konsep om die Grondgebruiker-Insentief (GI) program te ondersoek. OPVs is voetuie vir samewerking tussen ‘n openbare en ‘n private vennoot om formeel saam te werk om ‘n projek te onderneem of ‘n diens te verskaf. Die fokus was om die moontlikheid dat die GI as ‘n OPV benut kan word om dienslewering in die Natuurlike Hulpbronbestuurs-sektor (NHB) te voorsien en te verbeter. In Suid-Afrika en elders op die aarde is die konsep van OPVs wyd benut in die ontwikkeling en bestuur van vervoer- en gesondheids infrastrultuur. Tot op datum is die geleenthede en moontlikhede van die gebruik van die OPV model in NHB nog nie te volle ondersoek nie.

Die gebruik van OPV op die terrein van volhoubaarheid het vastrapplek gekry na die Verenigde Nasies se *World Summit on Sustainable Development (WSSD)* wat in Suid-Afrika gehou is vanaf 26 Augustus tot 4 September 2002 tien jaar nadat die eerste Aarde Beraad in Rio de Janeiro gehou is. Die 2002 konferensie het ontwikkelingsvennootskappe bo-aan die ontwikkelingsagenda geplaas en hulle rol in die bereiking van omgewingsvolhoubaarheid daarmee erken. Die Vennootskappe vir Volhoubare Ontwikkeling is opgestel as vrywillige en nie-onderhandelde samewerking tussen die regering en verskillende groepe insluitende die private sektor. Tydens die Verenigde Nasies se Volhoubaarheidsberaad op 25 September 2015 (Parys Klimaatsveranderingsooreenkons), is die volhoubaarheid ontwikkelingsdoelstelling nommer 17 wat betrekking het op ‘Vennootskappe vir Doelstellings’ en die behoefte vir vennootskappe in die omgewings- en ontwikkelingssektor met die regering en private sektore as sleutel rolspelers, opnuut herbeklemtoom.

Die Groot Marico GI in die Noord Wes Provinsie is as gevallestudie gebruik om te bepaal of die LI op die beginsels, praktyke en raamwerk van die OPV model geskoei kan word. Die resultate dui daarop dat die GI in NHB gebruik kan word om ‘n openbare dienste deur middel van ‘n OPV as die diensleweringsvoertuig, te lewer. Die studie het tot die gevolgtrekking gekom dat daar op ‘n bepaalde vlak ooreenkomste bestaan in die wyse hoe die GI en OPV geimplementeer word en dat beide gebruik kan word om dienslewering te verbeter deur middel van vennootskappe.

Die regulatoriese raamwerk moet daarop fokus om deelname deur die private sektor om tot openbare dienslewering by te dra, aan te moedig om suksesvol te kan wees. Die daarstelling van ‘n regsraamwerk deur die deelnemende betrokkenheid van al die sleutel rolspelers is

nodig om te virseker dat almal se behoeftes inag geneem word en dat die proses goed gereguleer word.

Die bevindinge van die studie bied die waarneming dat in sy huidige vorm en struktuur, die GI program nie die department se NHB afdeling vrywaar van die bedreiging van die mislukking deur die implementeringsagent nie. Die idee dat ‘n beduidende deel van die risiko oorgedra word aan die implementeringsagent is nie versoenbaar met die gedagte dat vennootskappe met die grondgebruikers gesmee word nie. Die resultaat is dat die risiko steeds by die NHB afdeling as die hoof finansierder van skoonmaakprojekte val. Indien die private sektor as die hoof finansierder gebruik word sal die kwessie van die operasionele risko aangespreek kan word. Voorts sal NHB afdeling sal dan slegs verantwoordelik wees om die prestasie van die implementeringsagent te bestuur. Dit is daarom veilig om tot die gevolgtrekking te kom dat aangesien die reg van elke burger tot toegang tot ekosisteem dienste volgens die Grondwet (RSA, 1996) verskans is, die poging om die GI as ‘n samewerkende reeling van ‘n OPV te implementer, uitgebreide openbare beraadslaging sal verg. Die NHB afdeling sal eers wyd oor hierdie reeling moet konsulteer om openbare opstand te voorkom. Wanneer die voorgestelde model aan die publiek voorgele word, moet die afdeling daarop fokus om die ekonomiese waarde wat die program sal tevoeg, en op die omgewings- en sosiale waarde daarvan.

Die studie het ook uitgewys dat die instelling en implementering van die GI program kan bydra tot die sukses van ‘n regeringswye programintervensie om die uitdagings van armoede en werksloosheid aan te spreek. Die lesse van die gevalstudie kan op die res van die land toegepas word omdat die GI ‘n nasionale progam is wat daarop gemik is om geleenthede in die NHB sektor te ontsluit. Verder studies behoort op die oorhoofse implikasies van die GI as die NHB afdeling se eie OPV insiatief, te fokus. Verdere navorsing kan op die toekomstige rol van beide staatsgedrewe en nie-regeringsinstansies wie se huidige rol is om die bewaring van ekologiese infrastruktuurbates vir die voordeel van almal te bevorder, sentreer.

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LIST OF ACRONYMS AND ABBREVIATIONS

BOO	Build-Own-Operate
BOOT	Build-Own-Operate-Transfer
BOT	Build-Operate-Transfer
DEA	Department of Environmental Affairs
DWA	Department of Water Affairs
EPWP	Expanded Public Works Program
IAPs	Invasive Alien Plants
JV	Joint Ventures
LUI	Land User Incentive
NPM	New Public Management
NWPG	North West Provincial Government
NRM	National Resource Management
PES	Payment for Ecosystem Services
PPP	Public Private Partnership
PFIs	Private Finance Initiatives
RSA	Republic of South Africa
SA	South Africa
SANRAL	South African National Roads Agency
SOC	State Owned Company
SDGs	Sustainable Development Goals
SWOT	Strength, Weaknesses, Opportunities and Threats
WfW	Working for Water
WSSD	World Summit on Sustainable Development

CHAPTER 1: GENERAL INTRODUCTION

1.1 Introduction

Contemporary societies generally accept that a State is a *fait accompli* and as such has particular responsibilities to meet the well-being of its citizenry. The major questions which governments face include the extent and the diversity of the services which need to be provided to meet the needs of the society (Thornhill, 2014:1 online).

In the case of South Africa (SA) and as enshrined in the Bill of Rights in the Constitution of the Republic of South Africa (RSA) of 1996, Section 24 which stipulates: “everyone has a right to:

(a) An environment that is not harmful to their health or well-being; and
(b) Have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that:
    - prevent pollution and ecological degradation;
    - promote conservation; and
    - secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development”.

Cumming *et al*. (2013:3) indicated that ecological infrastructure is the nature based equivalent of built or physical infrastructure, and is significant for the provision of ecological services and sustain socio-economic development. The authors made the argument that ecological infrastructure is an asset from which a range of services flow, either directly to society or as part of a broader infrastructure system which includes built infrastructure (for example, natural catchments which function with a dam including pipes to provide water to a nearby settlement). The latter is consistent with Abrahamse’s (2014:7) view that ecological infrastructure is strategically planned and managed networks of biodiversity. Furthermore, it maintains integrity of the ecosystems and provides benefits to society thereby making it relevant in the African context.

Ecological infrastructure as with all forms of infrastructure requires maintenance, on-going management, and in certain instances restoration in the case of degradation (Cumming *et al*., 2013:4). Giordano, et al, 2012:6) asserted that there is no single financing option to address the challenges of ecological infrastructure maintenance and thereby ensuring its continued

provisioning of ecosystem services. As a result, mechanisms are now needed to implement incentives and disincentives to unlock private sector investment to manage natural resources.

In light of the above, the Department of Environmental Affairs (DEA) introduced the Land User Incentive (LUI) program which is aimed at establishing partnerships with various institutions interested in adding value to the operations of Natural Resource Management (NRM) program's (DEA, 2013). The LUI which is the focus of the study refers to the harvesting and processing of biomass from invasive alien plants (IAPs) and bush encroachment.

Jenkin and Mudombi, (2018: 3) argue that "Invasive Alien Plants represent a serious environmental challenge in SA, impacting on biodiversity and water supply. A set of national strategies for clearing IAPs and beneficiating the biomass have been implemented over the past decade, with mixed success in job creation, enterprise development and poverty alleviation". This therefore support the need to have programs like the LUI to be well coordinated and managed so as to have positive impact on the management of natural resources and contribute to employment creation and poverty alleviation whilst contributing to a healthy natural environment.

1.2 Background

According to Coetzer and Louw (2012), the Department of Water Affairs (DWA) initiated the Working for Water (WfW) Program in 1995 as an effort to address the problem of invasive alien plants. The overriding goal of this ongoing program is to alleviate poverty through the creation of short to medium term employment opportunities for unskilled people linked to the clearing of alien vegetation. There are projects linked to the program to add value to the harvested alien biomass. Using a customised tender process, the WfW program contracts teams to clear invasive alien plants in order to save water resources. These contracted teams are based on labour-intensive approach, the Expanded Public Works Program (EPWP) which target unemployed individuals from poor communities.

These individuals "are not employees of WfW, but have commercial contracts with WfW and are paid for completed quantities of work. Contractors are responsible for completing contracts as specified by WfW as well as recruiting and managing their teams and equipment. Workers are employed by contractors who enter into employment contracts with them" (Coetzer and Louw, 2012: 793).

The system proved to be inefficient because of delays caused by, *inter alia*, lack of land-owner participation, and lack of accountability to manage the control of invasive alien plants by land-owners as well as financial constraints experienced by the WfW program.

According to Magadlela (2001: 2) "the Working for Water (WfW) program is a labour intensive alien vegetation-clearing program with a strong focus on poverty alleviation. Its social objectives include the development and economic upliftment of local communities through the creation of short-term employment, training opportunities and skills development, as well as through the development of mutually beneficial community and business partnerships that recognise social and economic empowerment and conservation objectives".

In its Circular titled, *The Working for Water Program* published in 2008, the Department of Environmental Affairs (DEA) indicated that the program's policy decision was to phase out the management to control invasive alien plants on private land by utilising incentives and disincentives so that the landowners would manage the species on their properties (Working for Water, 2008: Online).

The decision was aimed at facilitating:

- ownership of the invasive alien plants problem by the proprietors (the landowners);
- accountability to manage the control of invasive alien plants;
- long-term sustainable control of invasive alien plants;
- build relationships between the land owners and the contracted clearing teams (thereby boost exit strategy opportunities for the team workers);
- share Working for Water and the land-owners cost;
- reach more land-owners with resources available to the Working for Water Program;
- partnership with local authorities to utilize rates and other incentives and disincentives to encourage compliance with policy and regulations related to invasive alien plants;
- a wider involvement of landowners, including impetus and dissuasion which can build on other priorities, for example, *Land Care*, preservation of endangered environment, and wildfire management;
- develop payments for environmental services by involving landowners and Working for Water contractors in the repair and maintenance of the natural water capital of the country; and
- A general condition of payments for environmental services.

This change in policy position implied that there would be a shift in the Working for Water Program's management responsibilities, especially on private land. However, Working for Water would still continue its management responsibilities on public land including land which is communally owned (Working for Water, 2008: Online).

It was only in the draft LUI program released by DEA that an intention was revealed to facilitate the inclusion of other NRM sub-programs under the LUI and this was because the existing standards were limited to and designed for clearing the Working for Water invasive alien plants activities. Therefore, this study centred on the initial model of the LUI which focused on clearing of invasive alien plants.

1.3 Statement of the problem

It is important to present the context of the issue to be engaged by this study so as to provide an in-depth understanding in the context of development priorities, service delivery and in the NRM sector. It is a common practice across the globe for government to collaborate with private sector stakeholders to deliver a public service on the realization that this can bring about much needed resources and impact.

In SA, the government needed to urgently find alternative mechanisms to enhance the delivery of services in light of the increasing service delivery protests across most municipalities. Most of service delivery protest tends to be linked to the need to have access to basic services and desire for employment. The use of public sector programs such as the NRM amongst other interventions are widely recognized as positive interventions in the fight against poverty and unemployment. There is therefore a need to accelerate service delivery efforts.

Owing to SA's role in global environmental matters, there is a pressing need and interest to find alternative ways to deliver services to support the protection of natural resources. This is more so in the NRM sector's value chain supported by the growing and renewed interest towards green economy. The country is generally facing pressure to provide basic services and the option to use PPP in NRM as one of the service delivery mechanism will add value to this effort and widen stakeholder participation. PPP in NRM can trigger a new way towards unlocking employment and eradicating poverty. South Africa's National Development Plan (Vision 2030), supported by the New Growth Path (NGP) (Including its Green Accord) and the Industrial Policy Action Plan (IPAP) have prioritized the green economy and environment sector as key to unlocking economic growth and employment.

In order to be able to improve on challenges of poor service delivery in water, empowerment, poverty alleviation amongst others, government had to find alternative ways and methods to prove efficient services to meet the needs of communities and to unlock development opportunities presented by its natural resources. PPP have been experimented in sectors like water, health and other socio-economic infrastructure projects supported by the National Treasury through creating enabling legislative environment.

PPPs initially gained government support as a development mechanism to mobilize private sector investment in the built infrastructure space and now lately its gaining traction and recognition in the NRM or environment sector.

Marx (2019) asserted that at an international level, PPPs for sustainable development have been operational for many years due to a changing nature of public policy-making as a result of shifting away from government to governance. This is a clear indication that governments are no longer the only providers of public policy but increasingly engage private actors and see private players as key in the delivery of public service through PPPs. There is consensus that through PPPs, the private actors provide a function which the public sector cannot provide or can perform more efficiently.

In the effort to improve public sector service delivery across the different sectors, PPPs are explored as alternatives. Drawing from the evidence by Marx (2019) above, private sector partners' participation in the delivery of public service have become a necessity. In the NRM space, PPPs along with the use of LUI and Payment for Ecosystem Services (PES) are explored in different countries to advance service delivery in the environmental / sustainable development sector.

Bryan (2012) reinforces the argument that incentive schemes are increasingly used to motivate the supply of ecosystem services from agro-ecosystems through changes in land use and management. He noted the complex effects of incentives on ecosystem services through their influence on land use and management. The author asserted that linkages can be established between incentives and land use change and between land use change and ecosystem services. It is therefore important to quantify and understand these linkages so as to progress more comprehensive analyses of the impact of incentives on ecosystem services, and the design of incentives capable of realizing synergies and avoiding tensions.

There are different types of incentives for ecosystem services emerging at a range of scales and usually called Payment for Ecosystems Services or Agri-evironment schemes. Bryan (2012) reflected that incentives can be implemented through a range of instruments such as direct payments/rewards, tax incentives, cap and trade markets, voluntary markets, auctions, and certification programs and these will be different from region to region. In SA the use of LUI is in line with these practices.

According to Mert and Pattberg (2018), PPPs for sustainable development emerged as voluntary cooperative arrangements between governments and non-state actors (particularly business and industry) that address specific sustainability goals. This largely have its background in the 2002 Johannesburg World Summit on Sustainable Development (WSSD), where it was decided as one of the outcomes of the summit.

Out of the five themes identified as the focus of policy-implementation at the WSSD are water, energy, health, agriculture and biodiversity. Water, agriculture and biodiversity were directly linked to ecosystem services. It was only during the World Summit on Sustainable Development and subsequent sustainable development events spearheaded the United Environment Program (UNEP) that the link between environments and land unfolded.

In South Africa the use of LUI in NRM is a growing trend spearheaded by the Department of Environmental Affairs to remove invasive alien plants on government owned land and even on privately owned land which necessitated stakeholder collaboration on the relevant NRM projects. This then trigger the need to explore PPP as a model for service delivery in the context of NRM.

The proposed use of PPP in the LIU program as presented in this thesis therefore seeks to provide a solution to improve service delivery in the public service in the context of the NRM sector. There is therefore an acceptance that most governments are struggling to deliver services on their own and most are turning to private partners to collaborate through different service delivery models such as PPP and development tools like LUI, and Payment for Ecosystem Services amongst others.

“The Working for Water Program’s willingness to take on the inter-sectorial, multi-disciplinary, and partnerships co-ordination role in its invasive alien plant clearing activities has moulded it into a leading example of possible ways to successfully run a public works program” (Magadlela, 2001:1).

The NRM sector is therefore focused on service delivery as a problem area requiring improvement but on the other hand, the need to find alternative mechanisms such as PPPs and LUI to improve service delivery in the public sector. This is more so in the context of rising unemployment and poverty in SA as well as the pressure exerted by international policies to preserve the environment and contribute to the mitigation and adaption to climate change whilst advancing socio-economic development.

Having discussed the context of the PPPs in service delivery and their relevance to the NRM sector, the section below will attempt to focus on the purpose of the study and discuss the PPP model can be tailored for the LUI Program. These will be linked to the assessment of how the study help us to better understand PPPs' role in NRM in the case of our study focus area. The questions to be answered by this research will add value to how we can understand partnerships' role in the context of NRM and the LUI program.

1.4 Purpose of the study

This study endeavored to assess the Land User Incentive (LUI) as a proposed PPP model in the context of NRM and propose strategies which can be incorporated into the model to enhance its efficiency and effectiveness. The study will draw on the application of the LUI with specific focus on Groot Marico's LUI) as a case study. In order to unlock this possibility, there is a need to develop a set of research objectives to as detailed below.

1.5 Research objectives:

- To explore and understand the application of the concept of PPPs and assess its successful impact in improving service delivery in both the built and health sectors locally and abroad.
- To describe the legislative framework of PPPs in South Africa.
- To critically analyze the proposed LUI as a PPP initiative for Natural Resource Management
- To provide program managers insight into factors for consideration when engaging private investment initiatives through PPPs in Natural Resource Management.

1.6 Study Limitations

The concept of Land User Incentive (LUI) concept in South Africa is fairly new and there are not many projects which have used this model especially in the context of NRM and exploring its linkage to the PPP model. The recent advancement of LUI in South Africa as a tool to manage the removal of invasive alien plants does not have that many projects rolled through the use of PPP and this present a limitation to access to data for this research.

Since adequate secondary data was limited, the researcher relied primarily on key informants to provide primary data to conduct a critical analysis. Another limitation was the lack of disclosure of financial records related to the LUI program.

1.7 Research questions and sub-questions

In her paper titled *Ecosystems as Infrastructure*, Abrahamse (2014) indicated that our financial system needs to shift which gave rise to the following subject matter which is the gist of this research:

- Can PPPs be utilized as acquisition option for the development and maintenance of ecological infrastructure assets for Natural Resource Management?

After critically examining the PPPs success factors in the built environment and health sector both nationally and internationally, there was a need to get responses to the following sub-questions:

- What is the Land User Incentive?
- What are PPPs?
- To what extent can PPPs be utilized in the South African NRM?
- What systems can be implemented for PPPs to flourish in the NRM value chain?

1.8 Significance of the research

Flick (2011:8) highlighted that social research can be utilized to serve two or more of the following social research purposes:

- exploration of matters, domain and circumstances and provision of earliest descriptions;

- discover new relations by collecting and analyzing data;
- provision of verifiable data and analysis as a premise to develop postulations;
- probe existing postulations and knowledge base;
- document the effects of involvement, treatments, programs, etc. empirically; or
- provide knowledge as a verifiably grounded basis for political, administrative and practical decision-making.

The study will introduce PPPs in the development and maintenance of ecological infrastructure assets to explore the LUI program and broaden the understanding of the concept of PPPs drawing from the many success stories in the health and built environment sector. PPPs have been widely used in SA to build health and transport infrastructure using different PPP models but this will be one of the first and rare attempt to use LUI in a PPP model within the NRM sector. The success of this will therefore seek to explore if LUI can be used to achieve PPP in NRM and the successes can be duplicated to other similar initiatives and provide benchmark for future research and development practices in this sector.

1.9 The study area

Groot Marico is located in the North West Province of South Africa and is geographically located at 25º 36' 0" South and 26º 25' 0" East (Maplandia, 2005: Online). The study area is found at an altitude of 1131 metres above sea level (Trojan Fans, 2014: Online) and situated just off the N4 Freeway, approximately 33.3 kilometres west of the Swartruggens town and 39.6 kilometres east of the Zeerust town. Figure 1.1 below illustrates the locality of the research:

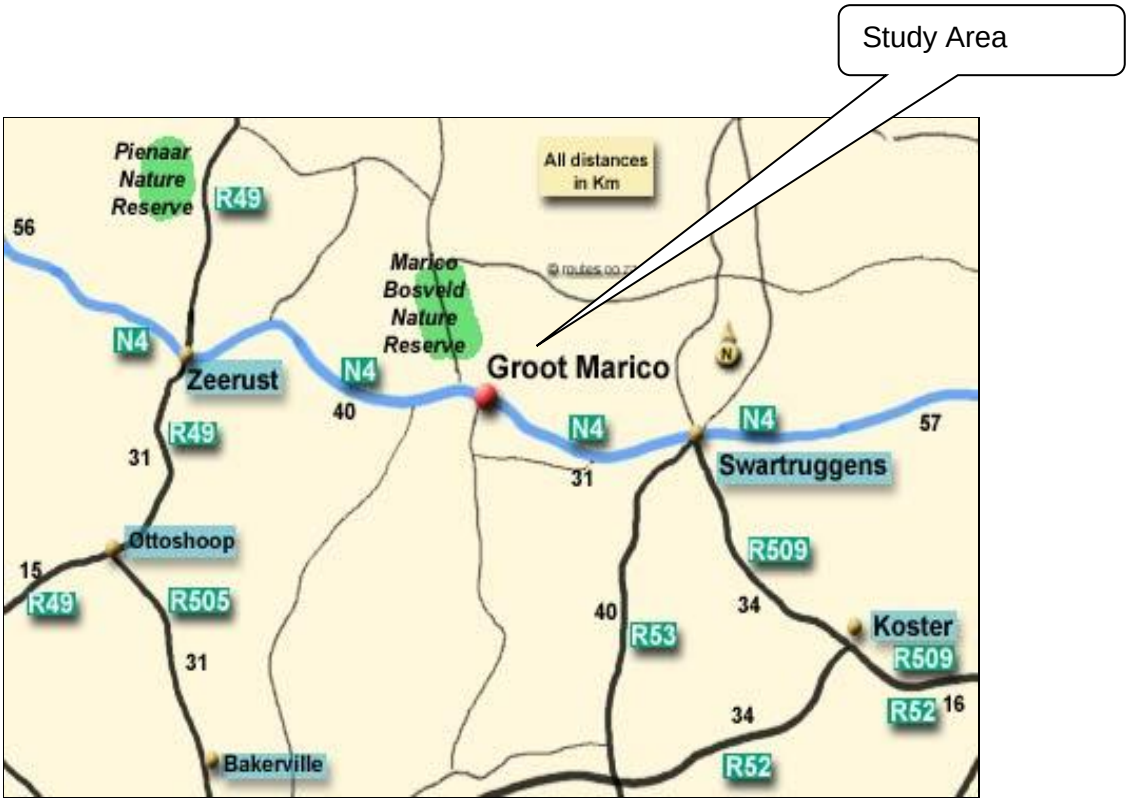

Figure 1.1: Location of the study area

Source: Adapted from SA Routes, 2005

1.10 Conceptual approach

The study is rooted in the application of the concept PPP. In SA, PPP is defined as a commercial transaction between a state-run institution and a private party in terms of which the latter performs an organizational function on behalf of the institution and assumes substantial financial, technical and operational risk in the planning, funding, building and running of the project. In return, the private party receives benefits for executing the organizational function, either by way of consideration to be paid by the organization or charges fees to be collected from end-users of the service provided (National Treasury, 2005: Regulation 16).

The concept of PPP is important as a service delivery tool. Governments came to the realisation that they simply do not have the financial resources required to meet their service commitments. PPPs are increasingly used to provide service delivery. The exploitation of various models of PPPs may enhance the delivery of ecosystem services which is basically dependent on the state of the ecological infrastructure.

Figure 1.2 below illustrates the LUI as a PPP model for ecological infrastructure assets maintenance:

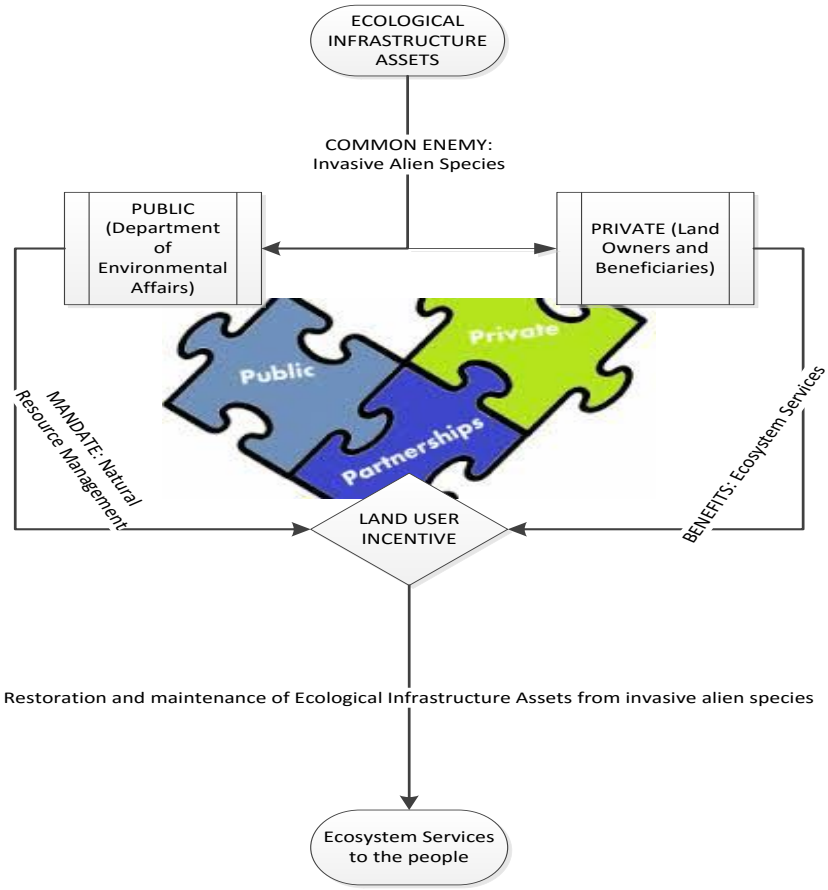

Figure 1.2: Conceptual approach, LUI

It can be inferred from Figure 1.2 above that a state-run public sector institution, in this instance the DEA, has the mandate to manage natural resources to provide ecosystem services for the enjoyment of the SA citizenry. On the other hand, the private sector (in this instance represented by land-owners and beneficiaries of ecosystem services), has a right to ecosystem services, which is enshrined in the Constitution of the Republic (RSA, 1996). The entire concept illustrates ecological infrastructure assets as a source of ecosystem services. With ecological infrastructure assets being invaded by invasive alien species, the public institution (DEA) tailored a partnership (LUI) with the private sector to clear invasive alien species to maximize ecosystem service delivery.

1.11 Research design

The research design adopted for this explorative study was a Case Study. A case study is presented when a “research examines one or a handful of cases over a period of time with detailed, varied and extensive data” (Neuman and Robson (2014:35).

Furthermore, Leedy and Ormrod (2013:141) concurred that a case study is occasionally referred to as idiographic research where a particular event is studied in-depth for a specific timeframe.

The case study approach enables a researcher to explore two or more cases. The cases are often similar or differ in certain key ways and compared and build theory or propose generalizations. Such an approach is referred to as a multiple or collective case. Furthermore, a case study is suitable for learning more about abstract or poorly understood situations (Leedy & Ormrod, 2013).

As a result, the case study research methodology was adopted in this research to investigate and provide a greater understanding of the place and role of a PPP, particularly LUI which is a model adopted for the management and maintenance of ecological infrastructure assets. Groot Marico was selected as an area of interest. In South Africa, the LUI is a new policy alternative in the NRM sector.

1.12 Research methods

Welman, et al (2005:281) argued that the procedures by which Researchers intend to explore a stated problem should be scientifically founded and should describe the following aspects:

- Inhabitants from which the participants will be selected.
- Sub-total of participants and how they can be selected.
- Number of groups and how these will be formed.
- How facts will be gathered and parameters of any instruments; and
- Probability methods to process and analyse gathered facts.

According to Leedy and Ormrod (2013:141), a researcher gathers extensive data on individual events on which the investigation is focused when a case study methodology is adopted. Furthermore, the data often includes observations, interviews (semi-structured interviews), documents (document analysis) and past records (historical documentation).

1.12.1 Primary data collection

The purpose of collecting primary data is to acquire first-hand information of the study area. There are various methods and tools to gather primary data and these are listed below.

a) Primary data collection methods

The primary method that was utilized to gather primary data in this research was the use of survey questionnaire. The survey questionnaire was used to obtain information on biographical details, opinions, beliefs and convictions about the topic from the research respondents. The questionnaire survey method was utilized primarily to explore the activities of the LUI which subsequently led to the formulation of the research problem.

Field survey – A detailed field survey was conducted to gather information on the state of ecological infrastructure assets before and after the implementation of the LUI in and around the Groot Marico area. This involved ecological and land use observation and the examination of the effects the implementation of LUI has had on both.

b) Primary data collection tools

Various data collection tools were utilized to ensure accuracy and comprehensive data so that its analysis would result in the successful conclusion of the study. The following tools were utilized: questionnaires, a focus group discussion and key respondents' interviews.

Questionnaires - According to Watts and Halliwell (1996:398), the administering of questionnaires is the oldest, frequently used and also most effective method of social survey enquiry. Questionnaires were administered to collect data on the socio-economic effects of the LUI on members in the Groot Marico community who are somehow actively involved in the program.

Focus Group – Gibbs (1997:1) cited Powell and Single (1996) in defining a focus group as one of individuals selected and assembled by researchers to discuss and comment, from personal experience, on the topic of the research. A target group is a form of group interviews but it is important to differentiate these from other forms of interviews.

Group interviews involve interviewing a number of people simultaneously, that is, questions posed by the interviewer (researcher) and responses received from the participants. Target groups, however, depend on reaction within the group based on

topics provided by the researcher (Morgan, 1997:12). The key characteristic which distinguishes target groups from other data collection tools is the insight and facts produced by the interaction between the interview participants.

The purpose of the focus group interviews was to collect qualitative data, essentially a qualitative technique for collecting information from individuals or a group. Using this data or information collection technique, the researcher facilitates the interaction or inquiry in a structured or unstructured manner and this gives the researcher an added advantage of gathering information that can perhaps not be easily collected by individual interviews (Welman, Kruger and Mitchell, 2005). For the purpose of the study, a focus group was utilised to explore the insights of participants in relation to the PPP concept in general and the LUI in particular.

Key Informant Interviews– The interviews were imprecisely structured conversations with persons who have specialised understanding of the topic the researcher intends to explore. These are conducted with people who knows what is going on in a particular community and help with the collection of required information from wide range of people. These may include residents, professionals and community leaders. These people have first-hand information about what is happening.

Previously it was highlighted that the LUI as a new policy initiative is not well documented. Therefore, it was necessary to rely on key informants (respondents) to gather more insight on the program.

c) Sampling strategy

Neuman and Robson (2014) postulated that qualitative researchers often utilize non-probability sampling also known as non-random sampling. Non-random sampling is defined as any sampling method where some elements of the population have no chance of selection, or where the probability of selection cannot be accurately determined.

The judgmental non-random sampling design was utilized in the study. In this type of sampling, subjects are selected to be part of the sample with a specific purpose. The Researcher tends to hold that certain subjects are fit for the research compared to other individuals and in this study judgemental sampling design is utilized. This is the reason why the respondents are selected purposively as subjects (Neuman & Robson,

2014: 136). This method was utilized because the respondents who had participated in the LUI program were selected and consequently, a sampling size could not be determined in advance.

1.12.2 Secondary data

Parab, Shaikh and Kadam (2013:14) assert that secondary data is gathered and recorded by someone else prior to and for a purpose other than the current project. This implies that the data is collected for another purpose and retrieved in the current project in a different context.

For the intention of the research, the following subordinate information was utilised: textbooks; journals; reports; government publications; peer-reviewed journal articles as well as maps and photos in relation to key terms relevant to the research topic. The data was collected to comprehend the ecological infrastructure assets as well as to determine the background and theoretical perspective of PPPs. This data was useful in shaping Chapters Two and Three of the mini-dissertation.

1.12.3 Data analysis and presentation

Data collected for this study was analysed and presented through the following software: Microsoft Excel, ArcView GIS and Microsoft Word. Secondary data is presented primarily in Chapters 2, 3 and partially in Chapter 4, while primary data is presented in Chapters 4 and 5.

a) Quantitative data analysis

According to Babbie (2016), quantitative data analysis as a research provides the researcher with the ability to convert data into usable and understandable information. This method “involve the technique by researchers convert data to numerical forms and subject them to statistical analysis” (Babbie, 2016: 430). Although this research did not focus on number crunching using quantitative data techniques, it will however analyze the responses received through quantification method.

In this research, the analysis and interpretation of the survey results was necessary to make the results more meaningful. This was focused on deducting logic with a clear focus, impartial information, administered circumstances and well-grounded conclusion. The income levels and educational status of the LUI participants were analyzed statistically to establish the socio-economic impact of the program. Tables,

percentages, means, averages and bar graphs were utilised to present quantitative data based on the respondent's responses. The quantitative methods enabled the presentation of the results of the research findings in a logical and simplified sequence to draw inferences from the statistics.

b) Qualitative data analysis

According to Neuman (1997), qualitative analysis measure objective facts; focus on variables; reliability is key and the research is detached amongst other key focus areas. In the case of this research, the qualitative methods enabled the critical analysis of the LUI program (DEA, 2013) compared to other PPP models. In presenting the overall analysis of the LUI, a table illustrating the Strength, Weaknesses, Opportunities and Threats (SWOT) was developed and presented in this research.

1.13 Definitions

The key terms in this research topic included: Ecological Infrastructure Assets; Land User Incentive; PPPs and Natural Resource Management.

Abrahamse (2014: 7) defined **Ecological Infrastructure Assets** as strategically planned and managed networks of biodiversity, maintaining integrity of the ecosystems and providing benefits to society. Similarly, the Gauteng City Region Observatory (2013:11) defined the same as the environment equivalent of built infrastructure, and functioning ecosystems which deliver valuable amenities to the people. The examples include, *inter alia*, mountain catchments; rivers; wetlands; coastal dunes; and spawning grounds.

DEA (2013:2) defined the **Land User Incentive** as a program aimed at establishing partnerships with various institutions interested in adding value to the Natural Resource Management Program's operations. The program is aimed specifically at the control of invasive alien species, repairing and preservation of natural assets and value-added industries from invasive alien plants and bush encroachment. The institutions targeted by the LUI as possible partners are as follows: Non-Government Organisations (NGOs); Non-Profit Organisations (NPOs); Community-Based Organisations (CBOs); government agencies or any other relevant organisation. An aspect of the requirements of the partnership was that the projects should be implemented as per the Expanded Public Works Program (EPWP) guidelines and Natural Resource Management norms and standards.

Natural Resource Management is a Department of Environmental Affairs' program and its sub-programs include, amongst others, Working for Water, Working on Fire and Working for Wetlands.

There is no single, concise and widely accepted definition of **Public Private Partnerships**; therefore, to define a PPP precisely is difficult because by creation it is a contextual concept, which responds to the organizational, lawful, funding and shared settings of the various jurisdictions, whilst also on the whole the contextual nature of the individual agreements (Colverson & Perera, 2012: Online). It is against this milieu that the LUI was deemed a public private partnership initiative utilised in Natural Resource Management.

However, to critically analyse the LUI program, the study adopted the PPP definition as defined in South African law: "*a contract between a public sector institution/municipality and a private party, in which the private party assumes substantial financial, technical and operational risk in the design, financing, building and operation of a project*" (National Treasury, 2005, Regulation 16).

1.14 Outline of the study

The research comprises of six components which are arranged as follows:

Chapter 1: General Introduction

This chapter introduces the study and provides an overview of what the researcher intends undertaking. The chapter focuses on understanding ecological infrastructure assets; problem statement; exploration goals; limitations; importance of the research; introduction of the study area which is the Groot Marico in the North West Province; conceptual approach; research design and methodology; and definition of key terms.

Chapter 2: Public Private Partnerships

The chapter explores the various concepts and theories of PPPs as well as empirical studies related thereto.

Chapter 3: South African Regulatory Framework

The legislative mandate of the State is outlined in relation to the development and maintenance of ecological infrastructure assets as well as the regulation of PPPs. Furthermore, the LUI as a policy initiative for PPPs in Natural Resource Management is analyzed.

Chapter 4: Case Study: The Groot Marico

The geographical characteristics of the Groot Marico and institutional arrangements in the study area is presented, particularly in the ecological infrastructure asset value chain. Geographical characteristics are categorized into physical and human characteristics. The chapter will also focus on highlighting the different ecological infrastructure assets and the significance to the local community to identify the need for the LUI as it is being implemented.

Chapter 5: Findings (Data presentation, analysis and interpretation)

The findings of the fieldwork conducted through various research methods highlighted in Chapter 1 is presented. What is of particular significance is how the LUI has been or is being implemented in the Groot Marico area. The chapter will analyse as well as interpret the data which emanates from the fieldwork.

Chapter 6: Summary and Recommendations

The final chapter will summarize the findings and investigate the broader implications of introducing PPPs, and LUI in particular for Natural Resource Management. Furthermore, recommendations will be provided for consideration when engaging private investment through PPPs for Natural Resource Management followed by a general conclusion of the study.

1.15 Conclusion

This chapter outlined a general overview of what the researcher intended to undertake, namely: focus on comprehending ecological infrastructure assets, research design and methodology as well as an outline of the study. Chapter 2 below describe various aspects of PPPs, including an historical overview, empirical studies and various critique.

CHAPTER 2: PUBLIC PRIVATE PARTNERSHIPS (PPPs)

2.1 Introduction

In the previous chapter, the various concepts and theories of PPPs were explored. Data on how PPPs came into being was discussed as well as specific definitions and various models which have been presented over the years as different forms of PPPs were explored. As with any policy, PPPs in their different forms would not be complete without challenges. Hence, this chapter will reveal both the advantages and disadvantages and investigate the argument for and against PPPs as well as explore related international experiences.

2.2 Historical overview of PPPs

A widely recognised goal for governments at national and local levels is to facilitate access to public infrastructure and services. Public authorities must decide whether public infrastructure and services ought to be managed by the state-run organization or in partnership with private operators. Bideau, at al (2006:6) noted that for many years, public authorities played a major role in offering aid in the design, finance and management of public facilities. However, budget pressures and growing demand for services imply that public authorities often no longer have the financial and technical capacity to meet the citizens, taxpayers and consumers' expectations. However, PPPs can address the problem (Bideau *et al*., 2006).

During the 1990s the phrase 'PPPs' was endorsed by authorities and organizations, for example, the European Union as a 'softer' alternative to the word, *privatisation*. It would appear that after the rewording, articulation such as public–private partnerships attracted more people and organisations to join the debate and consequently, enabled private organisations to get a market share of public service provision. Several authorities have tried to avoid using the terms 'privatisation' and 'contracting out' in favour of speaking about 'partnerships' (Hall, 2008:2).

As stated by Zulu (2007:13), PPPs emanated in the UK in 1992 in reaction to the requests for infrastructure re-establishment, state-run sector reform and improved public service delivery. Furthermore, there was compulsion for more cost effectiveness and clarity in the allocation of public funds. Zulu (2007:13) further asserted that the earlier PPP projects were similar to current ones in that these combined the cost effectiveness of the private sector with the authorities' control to meet the requirements of the communities.

The three prominent countries on global scale of using PPPs were: England, Australia and Canada. The distinguishing factor in two of these leading countries, England and Australia, is that the PPP venture were conducted through a broad authority program rather than on a once off basis. Therefore, the conceptualization of PPP can differ both in time and place depending on one's theory of the role of the state in a country's political economy (Zulu, 2007:14).

PPPs tends to be implemented differently across countries and there seem to be no uniformity in approach and new ways to implement the concept will need to be established to maximize their impact. The concept of PPPs is no longer confined to government and the private sector only but widened to include communities in what came to be termed Community Public Private Partnerships (CPPPs). The boundaries PPPS continue to shift and evolve.

PPPs are set up to execute particular transactions and in today's terms the membership is no longer confined to intermediate authorities, local government and the non-public sector players. The boundaries appear blurred with reference to community involvement. Training and health groups receive sponsors from both state run organizations and non-state run sources (Geddes, 2005:1). According to Pattberg et al, 2012:1-2), PPPs present creative form of management which talk to the shortfall of nationwide politics by bringing together key actors of communal, authority and business.

For many years, partnerships have been espoused by governments and will continue to gain traction over the next few years. Moreover, the context has changed significantly (Geddes, 2005:2-3).

Zulu (2007:14) wrote that in the far distant past, there was a shift towards deregulation and privatisation leading to an undertaking that required infrastructure is acquired by persuading private sector organizations to dispense services in collaboration with state run organizations. In recent years the focus has shifted towards delivering services like, welfare, education, social housing, waste water treatment works, prisons, parking stations, museum buildings, harbours (Grimsey & Lewis, 2004: 1-2) and environmental protection as well as sustainable development services (Pattberg *et al*., 2012:2).

2.3 Understanding the new order PPPs

PPP is a generic name to which no single and concise definition is generally agreed upon. For instance, Hodge and Greve (2005:1) noted that a cooperative institutional arrangement or a contractual agreement (Colverson & Perera, 2012:1) connect state run organization and non-

public establishment. Grimsey and Lewis (2004:2) concurred and defined a PPP disposition as consequence of non-public establishment implementing the delivery of infrastructure based services. The mechanics of the arrangement can take many forms and can be a subject for debate, but central to this concept is "partnering" encapsulated in Geddes' (2005:1) definition:

> "Partnering involves two or more organisations working together to improve performance through mutual objectives, devising a way of resolving disputes and committing to continuous improvement, measuring progress and sharing gains''.

A public-private partnership can be elucidated adequately, as a long-term contract between a non-public organization and an authority representative for the delivery of a communal amenity or service, in which the former bears notable risk and management responsibility, however, there is variation in practice based on the separation of ownership and risk-bearing between the public and private sector actors (World Bank Institute, 2012: 11).

Back in 2005, Davies and Eustice (2005:14) argued that the European Union did not have an official definition of a PPP. It is worth nothing that despite the lack of official definition of PPP in the European Union as of in the year 2005, the European Commission's 2004 Green Paper on Public-Private Partnerships made reference to PPP. The commission referred to PPPs as forms of cooperation between the public and private sectors for the funding, construction, renovation, management or maintenance of an infrastructure or the provision of a service. This gave some insights into the concept of PPP.

Immense discourse on the conceptualization of PPPs emerged. The common discourse was whether PPP require clarity and what constitutes a PPP (Khanom, 2009:2-3). Certain scholars contended that PPP require to be reformulated. For instance, Hodge and Greve (2005, 2-3) held the view that there was a prerequisite to re-evaluate the various interpretations given to PPP to establish whether the concept is worth retaining and using for verifiable research because of the numerous definitions.

Risks and benefits are important features in Greve's (2008:115-116) definition. A number of scholars contended that PPP required no particular interpretation because the postulation remains an umbrella notion in constant evolution and covers a wide range of economic activities (Bideau *et al*., 2006:7) and legal frameworks designed to accommodate political choices. For example, Brooks, Liebman and Schelling (1984:268) argue that private actors who seek to exploit new opportunities must have the resources to adapt to the new public management approach.

There is a realization that for PPPs to work and be effective, there is a need to build strong collaboration with the private sector and this model, if well implemented can help solve concrete problems faced by government regarding service delivery. In recent years there have been a growth of the concept of New Public Management (NPM) which is defined as an approach focussed as running certain aspects public service organizations' work such as service delivery using private party to deliver a service which will normally be delivered by a public entity.

Khanom (2009:1) concurred and highlighted that the NPM shifted focus from public service to service delivery and PPPs encouraged as a new management tool for advanced and emergent nations. Central to NPM is the curtailment of state spending, of responsibilities to the private organization (Khanom, 2009) and promoting voluntary engagements with the private organizations to provide communal commodities (Mitchell-Weaver & Manning, 1991:2).

The private organization is assuming progressively more activities which were formally regarded as unshared control of the State. The State set off to be the "buyer" than to be supplier of services. As the word 'partnership' propose, the aim is to produce an infrastructure 'dream team' by incorporating the finest state (prescriptions, pronouncements, communal based concern) and private organizations (creative, cost effectiveness, finances) sector capacity to discover solution to infrastructure-related requirements of the former (Colverson & Perera, 2012:1).

Therefore, PPPs describe the formation of the connection linking two groupings and guarantees the finest of one and the other contributes towards quintessential communal amenities. What this necessitates and the proportion each of the grouping will play in a project is distinctly circumstantial in nature responding to the institutional, legal, investment and public procurement settings of various jurisdictions. However, widespread assumptions which shape a PPP can disconnect it from what the practice seek to attain (Colverson & Perera, 2012:2).

In South Africa, government utilized the term PPP to cite the deployment of the delivery of communal amenities by private organizations. PPPs are adequately latest in South Africa and their support for service delivery differed across state organizations (Zulu, 2007:15). There is acknowledgement that the state must try different techniques for collaboration and blend of partnership suitable for each project which is being implemented.

2.3.1 Different forms of PPPs

a) Build-Own-Operate-Transfer (BOOT)

The private organization control the blueprint, building and running of the infrastructure over the project term, with ownership and control given back to the state at the termination of the contract. An example is the 20 year Gautrain Rapid Rail Link for the Gauteng Department of Public Transport, Roads and Works which was concluded in September 2006 (PPP Quarterly, 2010:7). According to Economic Information Management Unit (2005:25), at the financial closer in January 2007 the project was recorded as Africa's largest infrastructure project delivered through PPPs.

b) Build-Own-Operate (BOO)

In this arrangement, the private organization maintain absolute possession of the infrastructure after finalizing the blueprint and building phases; pursue running the amenity, essentially replacing the state as provider of communal amenities for the duration of the contract term (Colverson & Perera, 2012:4). An illustration is the water treatment plants which serve proportion of Australia. These resources, funded, designed, built and operated by private organization, processes raw water provided by the public sector entity for delivery to consumers (Grimsey & Lewis, 2004:11).

c) Build-Operate-Transfer (BOT)

BOT are contracts in which the private organization takes principal control for financing, scheming, erecting and operating the project. Control and formal ownership of the project is then transferred back to the public sector. An illustration is the third Dartford Crossing of the River Thames linking two stretches of the M25 motorway circling London, operated (with practical guaranteed toll income) by the vehicle company for up to 20 years, with the facility reverting to the UK government at the end of contract term (Grimsey & Lewis, 2004:11).

In South Africa this model was utilised for the Department of Trade and Industry's Head Office accommodation which was designed, financed, built and operated by Rainprop Consortium for up to 25 years. The amenity will eventually be returned back to the National state of the RSA at the termination of the contract term (PPP Quarterly, 2010:6).

d) Leasing

Under the leasing agreement in PPP, the private operator is responsible for operating and maintenance of the utility which is managed and implemented through the PPP model. The private operator is not responsible for financing project or investment.

The South African National Roads Agency SOC LTD (SANRAL) also utilises concessions for the operation and maintenance of most of its road networks. Currently, it has 30-year contract with the N3 Toll Concession (RF Pty) which covers a distance of 415 kilometres; N1-N4 Bakwena Platinum Corridor Concessionaire which operates 385 kilometres of road; and Trans African Concessions which operates 570 kilometres of the N4 route from Tshwane stretching across the Mozambique border to the Port of Maputo in Mozambique (SANRAL, 2015:19).

e) Joint Ventures (JV)

Joint Venture (JV) arrangements take place when the private party and state run organizations jointly financed, own and operate a facility. The United States utilizes this model for its urban regeneration in which domestic authorities buy and strip ruined areas to erect communal amenities, for instance, new city halls or state offices as part of downtown refurbishment. In this type of arrangement, the state's role is that of a statutory and investor in managing the corporation (Grimsey & Lewis, 2004: 11).

According to Hweshe (2012), the South African government announced that it had undertaken a joint venture cooperation with a worldwide pharmaceutical corporation. The cooperation would result in Anti-Retroviral (ARV) drugs being produced locally thereby creating much needed employment opportunities for the local citizenry.

f) Operations or Management contracts

In this instance the private organization is only partly involved and charged with diverse duties relating to the coordination and sustenance operations normally discharged by the state. This category of agreement requires payment to the private organization which attends to the daily routine sustenance, services and or manages operational requirements in the best interest of the state (Pessoa & Frias, 2006:13).

The intention of a management contract is to introduce a differentiated team of skilful managers to gain particular operating goal matching environmental infrastructure rehabilitation, invasive alien plants control, value added industries, employment creation and the reduction of the cost of operations. Service or management agreements allow the private organization to dispense infrastructure associated services for a particular timeframe (Grimsey & Lewis, 2004:11). Most of these management practices are implemented for a period of five years. They provide for enough time to subject the transactions or projects to scrutiny, assess potential areas of complications as well as be able to initiate possible reforms which will be of benefits to both government and the consumers (community) and mostly in the form of reduced tariffs and sudden change in dividends.

According to PPP Quarterly (2010:7), the South African Department of Transport National Fleet Management project is an example of a private sector entity which acquired a five-year contract to design, finance and operate the national fleet management since September 2006.

g) Cooperative Management

Cooperative management as a collaborative arrangement transpires between government and private entities in a more informal way than many of the equity partnerships and concession type franchise arrangements for social housing projects. In Korea and many other countries, unconventional power creators and self–generators (in Australia they include households with solar panels) can trade in power to the domestic grid.

Joemat-Pettersson (2015:2), reported that the Department of Energy (DOE) approved 79 projects with a combined capacity to generate 5 243 MW power across the renewable energy spectrum. On completion, these projects would contribute additional energy to the national grid.

In Costa Rica and South Africa, the state creates and sustain national parks, while the private organisations develop the eco-tourism programs and finances traveller stimulation thrusts campaigns (Grimsey & Lewis, 2004:12). Table 2.1 below display a summation of PPP representations which can be actionable.

Table 2.1: Models of PPPs

PPP TYPE	**PARTNERSHIP ROLES**
Management Contract	The private organization provides a service or manages a contract to a public service department
Joint Venture	The State act as a regulatory and investor in implementing programs
Leasing	The private party control the implementation and sustenance of the public amenity while the state assumes ownership
Build Operate Transfer (BOT)	The private party assume control of financing, scheming and implementing the project. The State takes control and ownership of project after the contract is terminated
Build Own Operate (BOO)	The control and ownership of the project remains in control of the private party
Design, Build, Finance and Operate	The State and private party enter into an agreement
Design, Build and Operate	A single contract is awarded to a private party to design, erect and implement the project, however the State retains legal possession of the public amenity
Co-operative Arrangements	This type of arrangement makes provision for equity cooperation deals and modified type franchise arrangements

Source: Adapted from Haarhof, 2008

Table 2.2: Classifications of PPP Models

Broad Category	**Main variants**	**Ownership of capital assets**	**Responsibility of Investment**	**Assumption of Risk**	**Duration of contract (years)**
Supply and management contract	Outsourcing Operational Management	State	State	State	1 - 3
Lease contract	Leasing	State	State	State/Private party	5 - 20
Concessions	Build operate Transfer	State/Private Party	State/ Private Party	State/Private party	15 - 30
Private Ownership of assets	Build Own Operate	Private Party	Private Party	Private Party	Indefinite
Private Finance Initiative (PFI)type	Design, Finance, Build and Operate	Private Party/State	Private Party	Private Party/State	10 - 20

Source: Adapted from UNESCAP (2011:5)

2.4 PPPs critique

An assessment of PPPs would not be complete if the perceptions of critics of the concept is not considered.

Hall (2008:13), for instance, maintained that the main examination about the PPP proposition is whether this provide an approach to finance and manage state run amenities which is better for communal amenities. Roehrich, Lewis and George (2014:111) on the other hand held that even if the PPP phenomenon has attracted a wide range of specialist and scholarly pronouncements, there was limited systematic review of evidence of the efficiency. Furthermore, the authors remained largely splintered and offered an incomprehensible picture of PPPs benefits and drawbacks.

Callan and Davies (2013:1-2) advanced the argument that there is a triple deficit in the manner in which PPPs deals are concluded. Originally, the expression partnership is used to cover a puzzling formation of dispositions, such that it is almost a symbolism cryptograph. Subsequently, there is limited knowledge obtainable (certainly relative to the scale of the joint investments claimed) distinctly illustrating collaboration erected and implemented. There is limited to almost no knowledge on which collaborations have achieved real growth and impact, and distinctly illustrated. The aftermath nullifies and gravitate towards attracting multitude of critics, who perceive a hidden agenda to aid international corporations obtain monopoly to international supply chains.

The original difference of opinion advanced for PPPs back then was that there was nothing unusual about the concept. States claim that because of the limitations on its borrowing, and unwillingness to escalate levy or fees, projects may effortlessly not go ahead without PPPs. This difference of opinion is utilized to support the assertion that PPPs are necessary, as well as dismiss the requirement to indicate value for money - because there is no alternative to which these can be compared.

The 2008 financial crisis divulged strategies indicating that budgetary limitations did not inhibit policy decisions in favour of state spending. As a result of this, states around the world increased their spending and borrowing to support the financial sector and the economy in general. The scale is far greater than investments raised for state run amenities through PPPs (Hall, 2008:13-14).

Hall (2008:14-15) does not agree with those who argued that PPP adds value because somehow it neither costs the state nor private organizations and associated therewith other assertions referred to as myths of PPPs as detailed in Table 2.3 below.

Table 2.3: Myths about PPPs

Myth	**Response**
Do PPPs reduce state spending, government subsidies, or user charges?	No. The authority or users have to pay the cost of erecting and the service whether it is done through a PPP or the conventional option.
Does a PPP mean that the private organization pays for the cost of building	No. The cost of constructing the building has to be paid for from state spending or user charges. This effectively implies that the private organizations borrows money – but the state is required to repay the loan with interest.
Does a PPP reduce the cost of running the services?	No. The cost of running the service is paid for from state spending or user charges. Verifiable affirmation has divulged that private organizations are normally no more efficient than the state run entities. Moreover, a PPP usually costs more to establish and manage.
Does it allow the government to spend more funds on other services?	No. The state run organizations has to spend at least as much on the PPP as it would on the conventional option. It may even have to pull back other services.
Do PPPs reduce borrowing?	No. The same amount of money has to be borrowed to pay for the erection of the building or even more, because PPP construction costs are conventionally excessive.
Do PPPs reduce State borrowing	Yes – if statisticians agree that it can be treated as an 'off-balance sheet'. However, there is rise in unpredictability of whether PPPs can be managed candidly as non-public borrowers.

Source: Adapted from Hall (2008:15)

These misconceptions take various forms, for instance, the suggestion that the state or the authorities do not have to pay for schools or hospitals developed by PPPs; idea that the municipality will have more money left to spend on other amenities; and PPPs implies a reduction in borrowing.

The conception of 'risk transfer' plays a dominant part in accounting for PPPs. The conception has been used, especially in the UK to justify the use of PPPs which could not illustrate that these were of preferable value than state run organizations option. Hall (2008:15) also divulged that transferring that 'risk' is not free. It is practicable to write contracts which hand over the threat of construction delays to the contractor, however, these contracts cost approximately 25% more than conventional contracts.

Several studies observe the debilitated effects of lengthy and expensive contract negotiation periods, proposing that there is still no clarity of, for instance, the types of 'risk' that can be handed over to private organization and when these can be transferred (Dixon *et al*., 2005, Froud, 2003; Hodge, 2004; Lonsdale, 2005) cited by Roehrich *et al*. (2014:114).

Roehrich *et al*. (2014:114), cited Lossa and Martimort (2012) that limited research has been conducted to investigate 'risk' and benefit sharing between collaborating organisations and across the entire PPP project network despite the repeated observation that (debilitated) extended contract negotiation is the direct consequence of risk allocation and quantification at the outset of the inter-organisational relationship.

It may be undesirable for state to pay extra for such risk transfers. Risk transfer plays a crucial part to achieve value for money in PPPs, but questions such as which 'risk' are more appropriately allocated to the state and which may be better shared between partners still remain tremendously disputed (Bing *et al*., 2005 cited by Roehrich *et al*., 2014:114). An economic analysis of 'risk' and PPPs deduced that it is most efficient for demand risk to remain with authorities rather than the private organizations even if a PPP is utilised. Hence, it would be a total squander to pay for this risk to be handed over to the private organization.

According to Hall (2008:15), the International Monetary Fund (IMF) has cautioned that states may overstate the real value of risk hand over. Additionally, a possibility exist that the authorities may overprice risk and overcompensate the private organization for taking it on, which would raise the cost of PPPs relative to direct state investment. No attempt appears to

have been made to monitor whether the risk hand over transpired in reality, or what benefit it really brought.

Roehrich *et al*. (2014:113-114) cited Boyne (2002); Engel *et al*., (2013); Hood (1995) that repeatedly the state disposition aims of PPPs, which is part of the New Public Management (NPM) logic, is to achieve higher efficiency by bundling investments, infrastructure and service delivery to pull out skills and infrequent financial resources as illustrated by UK Private Finance Initiatives, from the private organizations. Furthermore, it is demonstrated that working with private organization may allow state run organisations to access particular resources and skills to understand remodelling reactions and, for instance, improved quality of health services (Kivleniece & Quelin, 2012 cited by Roehrich *et al*., 2014:114).

This is a stark contrast to a purely contracting out approach where the state run organizations hands over its infrastructure and service provision to the private organizations with restricted control or participation. Set against these prescriptive policy contentions is the equally prevalent critique that such collaborations are essentially political representations and political alternatives (Lonsdale, 2005 cited by Roehrich *et al*., 2014:113-114). Roehrich *et al*. (2014:113-114) further cited Linder (1999); Winch (2000) expressly as policy mechanisms, PPPs are plainly endeavours to respond to infrastructure underperformance at a time of budgetary limitations by moving expenditures off-budget and transferring costs on to future authorities.

Crown (2012:6) asserts that a Treasury assessment of Private Finance Initiatives divulged that certain elements possess, nonetheless, benefits, which includes the private organizations project management skills, remodelling and risk management knowledge.

Hall (2008:16) postulates that there is a claim by a faction of PPPs supporters presupposing the private organization is more efficient in all areas than government and state run organization employees. It is assumed that private organizations can finance investment inexpensively and effortlessly, and operate a service more efficiently than the state run organization. It is therefore wrong to assume that just because private organizations are seen as better positioned to run public service more efficiently than government, the financing mechanism for this will not necessarily come cheaper than the public sector (public authority). The opposite is true in almost every country in the world, governments can borrow money inexpensively, and at reduced rates of interest than private organizations. Observed attestations divulged that the private organizations are neither more efficient than the state

run organizations nor particularly successful in financing capital expenditure for essential infrastructure amenities.

Cotemporary research does not offer experiential scrutiny deploying, for instance, longitudinal estimates of the successful transfer of expenditure off the financial statement. This gap offers fruitful avenues to strengthen evidence of the dis-benefits of PPP arrangements. Correspondingly, there are well established distresses that by involving private organisations in government decision-making, the dynamics of state accountability is changing (Forrer *et al*., 2010 cited by Roehrich *et al.,* 2014:114).

There is a notable discourse of the delegated appropriateness of specific PPPs for the delivery of communal infrastructure in different sectors. For instance, Torres and Pina's (2001) observation of PPPs across EU local authorities as cited by Roehrich *et al*. (2014:114), illustrates that the majority of these projects are associated with activities which are not typically core communal amenities. Roehrich *et al.* (2014:114) quoted Walder and Amenta (2004) and deduced that PPPs are befitting for moderate projects which can function as stand-alone entities with reduced risk profile. When considering whether to deploy PPPs, attention needs to be drawn to possible power and knowledge irregularities.

According to Roehrich *et al.* (2014:114), certain scholars contended that state run organisations often undertake sub-ordinate roles in PPPs which may confine them into post-contractual lock-in situations considering the length of these contracts. Furthermore, risk management and financial evaluation in PPPs continue to attract much attention. Despite the valid criticisms, the themes identified by the systematic review focused on articles which engage with PPPs as a notable policy reality and seek to deploy these as effectively as possible.

Crown (2012:6), who focused on the critique of UK's Private Finance Initiative (PFI), highlighted the following as weaknesses of the model based on past projects and called for reforms:

- The acquisition process has often been slow and costly for both the state run and private organizations. This has led to surge in costs and has reduced value for money for the taxpayer;
- contracts have been inadequately malleable during the operational period, thus affecting amendments to reflect the state run organizations amenities requirements difficult;

- there has been insufficient clarity of future accountability created by PFI projects to the taxpayer and investor repayment;
- inappropriate risks have been transferred to the private organization resulting in a higher risk premium being charged to the state run organizations; and
- Equity investors in PFI projects are recognized to have made windfall gains, and this has led to concerns of the value for money of projects.

It is noticeable that frequently PFI has been utilised for projects and its approach had been inappropriate, therefore, failed to deliver value for money. Weaknesses in the fiscal and monetary worth framework meant that authorities and state run organizations procurement decisions were on occasion misrepresented.

2.5 Empirical studies on PPPs

Having looked at the public procurement models, PPPs activity and recurring PPP issues, Davies and Eustice (2005:69-71) highlighted the following recommendations:

The funding challenge confronted by governments in the rejuvenation of state infrastructure and amenities continues to be a centre on European plans. The political and state controversy of former years had declined and PPPs are now widely received as a practicable means of acquiring and implementing this required rejuvenation. Furthermore, these are being adopted increasingly. There is strong movement of PPP agreements in numerous countries within Europe, increasing uptake in project acquisition in countries where activity has previously been low, and intensifying interest in PPP models across the rest of the region. In addition, more countries are establishing dedicated PPP units or enacting legislation to assist in streamlining the procurement process. Nevertheless, PPPs are complex and recurring issues continue to impede its development. Given the potential which PPPs to deliver the already stated crucial communal amenities, it is important to share encounters, examine paradigms for the market, and find solutions to main impediments, thus advance PPPs across the state run organizations.

Davies and Eustice (2005:70-71) recommended the following to streamline the acquisition process:

- ***Build national PPP Centres of Excellence***

  While a European Union (EU) Knowledge Unit would be successful in advancing the use of PPP propositions, it should not impose a common EU-wide approach. There is comprehensible usefulness in having a key unit providing guidance and policy on PPP matters within each EU country. Nations that have entrenched a central PPP unit have gained from this funding because these units also offer encounters and can encourage evenness.

- ***Balance sheet treatment should not be a key driver for undertaking a PPP***

  The financial statement of a transaction should not have influence on whether a PPP blend is the best form of acquisition. Notwithstanding its financial statement, the state run organizations, should communicate their future commitments under PPP agreements.

- ***The EU Commission should provide guidance on PPPs for the public sector which includes guidance on procurement procedures***

  Until aggressive conversation is conducted as a PPP acquisition avenue (and most discussions and feedback propose that competitive conversation is unsuitable to PPP acquisition), such advice should include information of the attainability and use of brokered procedures.

- ***Shadow private sector bid model***

  State-run organizations ought to duplicate prospective private organization bids, including life cycle costs and cost of funding preceding introducing it to acquisition so that the authority has a realistic view of the project's affordability.

- ***Streamline speed and cost of procurement***

  Government should critically appraise the number of bidders and sequence of proposals necessary for a specific project. It is frequently preferable to get to monetary conclusion on a sound agreement rather than endlessly delay a project for the sake of a “best deal”.

- ***Create a EU Knowledge Unit***

  Governments ought to carry on with its work to pin point and remove legal uncertainty and obstructions to PPPs. Nevertheless, the modelling of an EU Knowledge Unit would facilitate sharing knowledge and best-methods among the continents countries. It is conceivable that PPP provide direction and demonstrate worldwide precedents to deliver projects so that Member States have the benefit of the rest of Europe’s experience. The private organizations should actively contribute towards this Unit’s work.

- ***Sharing refinancing benefits***

  There should be a degree of debt refinancing sharing connecting the state run and private organizations. Nevertheless, the state run organizations ought to guarantee that it does not discourage the market with an unfair share of the refinancing. In addition, there ought to be no substantial sharing in equity sales returns because this could lead to a restrained availability of PPP capital.

After evaluating cost effectiveness; risk transfer; quality of amenities and accountability as well as the impact on workers and the community based on the Confederation Bridge PPP project case study conducted by Loxley (1999: 48-49), the following was concluded:

- The Confederation Bridge project was an exceptionally composite design-build-operate-transfer PPP. It seemed characterised by complicated financial agreements, complicated multi-level agreements and an amendment to the Canadian Constitution. Given the magnitude of the bridge project itself, the scale of the PPP agreements should not be a surprise.

- The noteworthy feature of the PPP was the widespread unavailability of information provided to the committees about the bridge. The repression of financial and economic information relating to the bridge gravely calls into question the honesty and answerability of the Strait Crossing Development Incorporated (a Consortium of international companies that designed and built the Confederation Bridge) and in addition to the authority. In reality, Canadians were not only refused the above information but they were given fallacious details of the project from the outset.

- Moreover, the community was deluded about bridge toll rates which were supposed to be set at the same level as those of the former ferry. The community, moreover was deluded with respect to the accessibility of the bridge.

- The authorities pledged that the project would not result in further cost to taxpayers. Notwithstanding the availability of the Auditor General of Canada's report, there may not have been a grasp that the financing agreements of the bridge cost taxpayers at least $45 million extra than it ought to. Neither had it been evident that the estimate of the ferry subsidy used in the financial arrangements of the PPP was over-inflated.

In summary, without discernment into the project delivered by the Canadian Auditor General, it may have not been be revealed that the Confederation Bridge PPP consequently incurred extra cost to taxpayers. Moreover, the PPP threatened to impose further costs on the community which, given the deceptive facts about the bridge's security package, might not have been admitted. The security/risk transfer preconditions of the bridge had a distinctly short-lived, superficial nature which did not safeguard tax payer's contributions that such a project demand. Loxley (1999:49) posed the following question: who would foot the bill when things started going wrong.

In their study titled "An overview of private sector community partnerships in forestry and other natural resources in Eastern Cape", Andrew, et al (2000:23) described, amongst others, the hurdles and bridges for successful collaborations from a communities' point of view as well as the supremacy of prescription on national assets and amenities tenure and labour on collaborations. Andrew *et al*. (2000: 35-36) summarised the study as follows:

- Private Community forestry collaborations in the Eastern Cape Province are at initial stages of growth. Hence, no planting and/or managing forests has begun. These projects experienced numerous of problems and progress has been very slow. The

initial collaboration project, inaugurated by the North East Cape Forests organization, was postponed even before it was implemented. The complications were diverse and out-standing amongst these are private organizations reactions to market changes, lengthy delays in acquiring afforestation permits, authorities ability challenges, and arduous ability to settle land matters.

- There exist cardinal dissimilarities in terms of purpose among the diverse allies, but these do not display insurmountable impediments and have not been responsible for the breakdown of cooperation. Nevertheless, there exist communication challenges between communities and organizations that could threaten the long-term viability of these projects.

- Communities expressed their disposition to undertake the collaboration and this interest is growing as poverty and joblessness soar, and people become acquitted with the benefits that cooperation could provide. Nonetheless, the communities rely on private and state run organizations to initiate and facilitate such projects.

- As much as there is substantial attentiveness from the private organizations, the highly priced and strains of initiating and developing this cooperation with communities had disheartened them.

The Republic of India (2010:57) outlined the following lessons learned from the Salt Lake Water Supply and Sewerage Network:

- Prior-project evaluation and practicability research are critical: ahead of proposals for a project, it is of paramount that governments assume rudimentary evaluations of the project area. These evaluations ought to stipulate the position of the physical infrastructure and the implementation cracks. The crux of the evaluation ought to discover the nature of infrastructure and the expenditure required. Essentially the evaluation dispenses sensible recapitulation of foundation to government and the private organization. Moreover, a comprehensive viability research ought to be taken up mainly in the case of a Greenfield project to ascertain the commercial operability of the initiated project.

- Constructive intervention of project implementation by the authorities: Kolkata Municipal Development Authority (KMDA) and Nabadiganta Industrial Township Authority (NDITA) played a pivotal part in delivering essential modifications to private organization to arrive at rational water cum sewerage charge. KMDA had several rounds of deliberations with the collaborators i.e. the IT entities to determine an acceptable tariff.

- Governments are obliged to provide complete collaboration to the private organization at differing phases: The private organization ought to be furnished with maximum cooperation during execution of the project. There were delays in handing over land free of cost to the private development agent which upheld the starting point of the construction works. It is important for the authority to steer clear of such setbacks. Nevertheless, in all other areas, the private developer acquired considerable assistance from KMDA and NDITA to ensure the effortless execution of the project.

2.6 Conclusion

The literature explored the concepts and theories of PPPs. It is apparent from these discussions that PPPs are likely to be petitioned in diverse disciplines. Cognisance of the critics' perceptions revealed that PPPs can always find a place in the midst of governments' deteriorating public service.

The literature is not exhaustive, the review of PPPs theories and the diversity of its applications in various fields as evident in the empirical studies is adequate to provide a base for a helpful comparison with the South African regulatory framework, which is the focus of the next chapter. The fourth objective of the study provides program managers insight into factors for consideration when engaging private investment through PPPs in natural resource management.

CHAPTER 3: SOUTH AFRICAN REGULATORY FRAMEWORK

3.1 Introduction

The indicated will present deliberative and rudimentary bodywork in relation to the development and management of ecological infrastructure assets. The State's role in the overall regulation of PPPs will also be explored.

Having described the various theories associated with PPPs in the preceding chapter, the Natural Resource Management Program's LUI policy initiative will be introduced with a view to determine whether in its current status it can be considered as a PPP compared to other such concepts which have already been presented.

3.2 Legislative mandate

Legislation discussed in this section are those considered as core in covering all the aspects of the research topic. Any citation of a law without the words, 'as amended', refers to the latest version thereof, including amendments.

3.2.1 Constitution of the Republic of South Africa, 1996

The Constitution enjoins the State to safeguard the environment for the enjoyment of current and subsequent cohorts through sensible deliberative measures that:

- Prevent pollution and ecological degradation;
- Encourage conservation; and
- Sound ecological unceasing growth and make use of natural resources while promoting justifiable remunerative and communal growth (RSA, 1996).

Governments will guarantee whether its citizens' right to an environment which is not damaging to their well-being is safeguarded (Section 24) (RSA, 1996)

3.2.2 National Environmental Management Act No. 107 of 1998

This Act specify the proposition which should "apply all-round the Republic to the actions of all state apparatus that may remarkably affect the environment and:

- Petition alongside all other suitable and contemplation, including governments responsibility to acclaim, safeguard, encourage and carryout the communal and remunerative rights in Chapter 2 of the Constitution and specifically the fundamental requirements of categories of persons depressed by unfair discrimination;
- Provide widespread skeleton within which environmental management and execution plans must be developed;
- Provide recommendations by credentials to which any authority must bring into play any function when taking any decision in terms of any statutory provision concerning the protection of the environment;
- Direct the clarification, management and execution of any law concerned with the safe guarding of the environment" (RSA, 1998: Section 2).

The proposed environmental management must prioritise the citizens and their necessities as well as provide their physical, psychological, growth, cultural and social interests equitably (RSA, 1998: Section 2).

3.2.3 National Environmental Management: Biodiversity Act No. 10 of 2004

Section 3 of the Act stipulates that the State must manage, protect and support the nation's biodiversity, its components as well as genetic resources. This is the legislative directive given to state run organizations which execute legislation appropriate to biodiversity to attain the citizens' rights stipulated in Section 24 of the Constitution (RSA, 1996). The Act provides, under Chapter 4, for safeguarding of ecosystems which is threatened or require conservation to guarantee the sustenance of their ecological integrity as well as guarantee that the exploitation of biodiversity is managed ecologically and sustainably.

The Act also comprises of a Chapter 5 which stipulates:

- Intercept unapproved introduction and spread of invasive alien species to ecosystems and habitats where they do not occur naturally;
- manage and direct invasive alien species to inhibit or reduce destruction to the environment and biodiversity specifically; as well as
- Eliminate invasive alien species from ecosystems and habitats where these may engender destruction (RSA, 2004).

These particular provisions are pulsated in the LUI's case study. The initiative was fundamentally pursued to manage invasive alien species, rehabilitation and maintenance of natural resources and value-added industries from invasive alien plants and bush encroachment.

3.2.4 National Water Act No. 36 of 1998

The aforementioned Act identify the authorities to serve as communal trustee of the country's water assets. The authorities are, therefore, compelled to guarantee that water assets are preserved, rehabilitated, conserved, managed and controlled in a viable manner (RSA, 1998: Section 3). For purposes of the study, protecting, conserving and managing are construed to include protection from invasive alien species. Hence, this Act is relevant in relation to the LUI program (DEA, 2013).

The Act also stipulates that government must develop a country's water assets approach which should set out recommendations, and plans together with organizational positioning in relation to the preservation, growth, conservation, management and control of water assets (RSA, 1998a: Section 6).

3.2.5 Conservation of Agricultural Resources Act No. 43 of 1983

The intention of this Act is "*to come up with the protection of the natural agricultural resources of the Republic*" (RSA, 1983: Section 3), which must be achieved by maintaining the productive potential of the land, combat the destruction of the water assets, preserve flora and prevent invasive alien plants invasions. Section 6 of the Act specify cause of action to be followed by land users in relation to, amongst others, getting rid of invasive flora (RSA, 1983).

3.2.6 Public Finance Management Act No. 1 of 1999

Section 76 of the Act provides that the National Treasury must formulate appropriate regulations to departments and institutions any matter that must be prescribed in terms of the Act, *inter alia*, the regulations may also prescribe the treatment of any specific expenditure as well as matters for which prior approval of a treasury must be acquired.

In light of the above, the National Treasury issued, in March 2005, Treasury Regulations for departments, trading entities, constitutional institutions and public entities. Regulation 16

which prescribes how PPPs business transactions should be concluded is of importance to this study.

Treasury Regulation 16 of the Public Finance Management Act: Public Private Partnerships

PPP is defined in the Regulations as a trading undertaking connecting state run and private organizations in terms of which the latter performs an organizational function in support of the organization; and / or acquire the use of state property for its own commercial purposes; and undertake fundamental monetary, technical and operational risk in connection with the accomplishment of the organizational function and/or use of government's property. A case in point, the private organization receives a benefit for undertaking the organization performance or utilising state run property, either by way of:

- Compensation by the organisation which derives its revenue fund or revenues of such an organization; or
- Impose a tariff to be collected by the private organization from consumers or customers of an amenities provided to them; or
- A compound of similar merger and such tariffs.

According to Treasury Regulations (National Treasury, 2005: Regulation 16), only the accounting officer or state run organization accounting authority may enter into a PPP agreement on behalf of that organization. The regulations prescribe a three phase approval process for all PPP transactions.

Phase 1: Feasibility study

Ascertain if the suggested PPP is in the best interests of an organization, the Accounting Officer or the Accounting Authority of that organization must assume a viability research which seeks to inscribe reasonableness, value for money and essential technical, operational and financial threat transfer. Upon completion of this phase, written approval from the relevant treasury should be sought. Moreover, a state run organization may not progress to the next phase without such approval. The approval for the viability research is regarded as Treasury Approval: I (National Treasury, 2005: Regulation 16.4).

Phase 2: Procurement

Preceding to furnishing any acquisition documentation for a PPP to any possible competitors, the state run organization must acquire concurrence from the relevant treasury for the acquisition documentation, including the draft PPP agreement. This concurrence is regarded as Treasury Approval: IIA (National Treasury, 2005: Regulation 16.5.1)

It is also prescribed that the acquisition plan of action must be in line with a procedure that is impartial, equitable, transparent, competitive and at lower cost; and must include inclination for the protection or advancement of persons, or categories of individuals, discriminated against by unjust prejudice in adherence with relevant prescripts.

Subsequent to assessments of the bids, but preceding to appointing the preferred bidder, the state run organization must submit a report for approval by the relevant treasury (Treasury Approval IIB) outlining how the criteria of competitiveness , value for money and significant technical, operational and financial risk transfer was applied in the process; outline how these criteria were satisfied in the preferred bid; include any other information which may be required by the relevant treasury (National Treasury, 2005: Regulation 16.5.4).

Phase 3: Contracting PPP agreements

After the acquisition strategy is concluded but before the Accounting Officer or Accounting Authority of a state run organization concludes a PPP concurrence, the latter and former authority must acquire approval from the relevant treasury. Approval (Treasury Approval III) is granted under the following conditions:

- the PPP agreement meets the requirements of affordability, value for money and considerable technical, operational and financial risk transfer, as approved during the viability research phase;
- a management plan that describe organizational proficiency, and its suggested techniques and procedures, to execute, manage, enforce, monitor and report on the PPP successfully; and
- adequate and legal conscientious is finalised in respect of the accounting officer or accounting authority and the suggested private organization in relation to matters of their respective competence and capacity to undertake into the PPP agreement (National Treasury, 2005: Regulation 16.6).

Management of PPP agreements

An organization's Accounting Officer or Accounting Authority that is party to a PPP agreement have a duty to make certain that the agreement is executed, managed, enforced, monitored and reported on properly, and maintain such techniques and course of action as approved in Treasury Approval: III to:

- measure the returns of the PPP agreement;
- monitor the execution of the PPP agreement and accomplishment under the agreement;
- liaise with the private organization;
- resolve disagreements and differences with the private organization;
- generally, oversee daily management of the PPP agreement; and
- Report on the PPP agreement in the state run organization yearly report (National Treasury, 2005: Regulation 16.7).

Amendment and variation of PPP agreements

It is also stipulated that earlier written approval of the relevant treasury is required for any substance revision to a PPP agreement including any such difference to the returns therein, or any waivers contemplated or provided for in the agreement.

The relevant treasury will approve a significant revision only if it's content that the PPP agreement, if so amended, will continue to provide:

- monetary worth;
- competitiveness; and
- Significant technical, operational and financial risk transfer to the private organization (National Treasury, 2005: Regulation 16.8)

Agreements binding the state

A PPP accord or a consensus revising such an agreement, binds the state run organization only if it was entered into on behalf of an organization:

- By the accounting officer or accounting authority of that state run organization; and

- On condition that all treasury concurrence essential in terms of Regulation 16 are accepted in approved PPP (National Treasury, 2005: Regulation 16.9).

Exemptions

Notwithstanding the above, public institutions may submit written application to the relevant treasury requesting exemptions from Regulation 16 as a whole. The relevant treasury may, subject to any terms and conditions that it considers appropriate, exempt that institution whether in relation to a specific PPP or in general from complying with the provisions of Regulation 16 in whole or in part (National Treasury, 2005: Regulation 16.10).

3.3 Other control measures

In acknowledgement that the laws set a broad regulatory framework both for natural resource management and PPPs in general, the following are additional control measures which have been implemented to echo specific details as highlighted in various pieces of legislation. These control measures are in the form of principles, policies, procedures as well as guidelines applicable to specific public institutions.

3.3.1 National Environmental Management Principles

Section 2 of the National Environmental Management Act (107 of 1998) (RSA, 1998a) stipulates the general environmental management principles which should apply throughout the country.

The core of the principles is that growth must be communally, environmentally and remunerate unceasing. Unceasing growth requires the contemplation of all relevant factors including the following:

- The disturbance of ecosystems and loss of biological diversity is avoided, or, where these cannot be altogether being avoided, is minimised and remedied;
- Both pollution and degradation of the environment is avoided, or, where these cannot be avoided altogether, is minimised and remedied;
- A counterbalance ramification on the environment and the citizen’s environmental rights be foreseen and discouraged. Even so, where these cannot be discouraged altogether, is minimised and resolved.

- Environmental management must be integrated. It must be acknowledged every single segment of the environment are interconnected and interrelated, and the repercussions of determinations on all features of the environment and that of the citizens is contemplated by tracing the selection of the best realistic environmental recourse.
- Non-discriminatory access to environmental assets, enjoyment and amenities meet primary individual necessities and ensure that individual well-being is pursued and notable action taken to guarantee access thereto by categories of individuals disadvantaged by unfair discrimination.
- Liability for the environmental wellbeing and protection outcome of a blue print, program, project, legacy, process, and amenity is prevalent throughout its growth.
- Collaboration and coalitions in environmental governance is encouraged, and all these must provide the opportunity to develop the understanding, competency and proficiency required to accomplish impartial and successful participation. Nevertheless, participation by unprotected and underprivileged individuals must be guaranteed.
- Community well-being and empowerment is encouraged through environmental education, raise such awareness, share comprehension and encounters through other appropriate means.
- The communal, remunerative and environmental ramifications of pursuits, including underprivileged and benefits, must be considered, assessed and appraised, and conclusions must be pertinent in the light thereof.
- Authority wide collaboration and congruence of policies, prescripts and efforts relating to the environment must be entrenched.
- Multinational liabilities relating to the environment is dispensed in the country's interest.
- The habitat is clasped in communal trust for the citizens. The enjoyment utilisation of natural assets must serve the communal interest and the natural asset is preserved as the citizen's common legacy.
- Endangered, highly potent or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require particular attention in management and planning procedures, especially if these are subject to substantial human resource usage and development pressure (RSA, 1998a: Sub-section 4).

3.3.2 National Biodiversity Framework

In August 2009, Department of Environmental Affairs provided the National Biodiversity Framework (NBF) (RSA, 2009) in terms of the National Environmental Management: Biodiversity Act (10 of 2004) (RSA, 2004). The foremost justification of the NBF was to provide a foundation to collaborate - and synchronize the efforts of the many organisations and individuals involved in protection and managing South Africa's biodiversity in support of sustainable growth.

The NBF was issued to various collaborators including but not limited to: state run organizations whose core business includes biodiversity conservation; Government-led programs e.g. Natural Resource Management; NGOs desiring to make a contribution to biodiversity conservation in South Africa; as well as the private organizations.

The NBF echoes that invasive alien plants are one of the major pressures of South Africa's biodiversity. The most important consideration is the efforts to protect and manage South Africa's biodiversity outlines in the NBF for 2008 to 2013 was the finalisation of the regulatory framework for the protection, control and eradication of invasive alien species (RSA, 2009: 10, 11, 37 and 42).

3.3.3 Norms and standards

In February 2014, the Minister in the Department of Environmental Affairs supplied norms and standards for biodiversity management plans for ecosystems in terms of the National Environmental Management: Biodiversity Act (10 of 2004) (RSA, 2004). For grounds of this research, the norms and standards provide for the preparation of Biodiversity Management Plans for Ecosystems. Such plans should highlight sets of ecosystems which warrant special conservation attention and included in the list are:

- Recognized as Freshwater Ecosystem Priority Areas by the latter project;
- Barriers linked to preserved areas;
- Those which play a remarkable part as an ecological infrastructure supporting the provision of ecosystem amenities; and
- Ecosystems presumably predominant for ecosystem-based adaptation to climate change (RSA, 2014a: 7 and 15).

3.3.4 PPP Manual

SA have entrenched an inflexible regulatory foundation in terms of which state run organizations can enter into PPP agreements. Earlier, review revealed that Treasury Regulation 16 is issued in terms of the Public Finance Management Act (1 of 1999) (RSA, 1999) which governs PPPs for national and provincial government. PPPs for municipal government are governed by the Municipal Systems Act (32 of 2000) (RSA, 2000), and the Municipal Finance Management Act (56 of 2003) (RSA, 2003).

Municipalities are not subjected to the PFMA or Treasury Regulation 16. In 2008, National Treasury issued separate PPP Manual Guideline for municipalities. National Treasury's PPP Manual and Standardised PPP Provisions are based on the PFMA and Treasury Regulation 16, and have been produced for organs of State (including their subsidiaries) to which the PFMA applies (National Treasury, 2004: 1).

Each module of the National Treasury's PPP Manual, together with Standardised PPP Provisions, are issued by National Treasury as a PPP Practice Note in terms of section 76(4)(g) of the PFMA. These PPP practice notes, which are updated from regularly, constitute instructions in terms of section 76 of the PFMA aimed at facilitating the application of the latter and its regulations. The National Treasury's PPP Manual (National Treasury, 2004:1) suggests that there are a number of National Treasury's PPP Manual modules which comprise of topics which range from South African Regulations for PPPs to Accounting Treatment for PPPs and Introduction to Project Finance.

The National Treasury's PPP Manual instructions are dispensed in the form of elaborate recommendations founded on latter's PPP Unit's experience therein to date. State-run organizations to which Treasury Regulation 16 applies seeks to digress significantly from these recommendations ought to advise the relevant treasury of such purpose prior to effecting, and explaining its reasons in the relevant application(s) for treasury approval in terms of the regulation (National Treasury, 2004:2).

3.3.5 The LUI Policy Initiative

According to Working for Water (2008:1), the intention for a LUI policy was set out in the Working for Water Program Circular which revealed that Working for Water took a strategic resolution to discontinue the management of working directly on the owner's land, and rather

use incentives and disincentives to persuade landowners to manage invasive alien plants on their respective properties as highlighted in Chapter 1 of this thesis.

The Circular highlighted the following as core principles of the new policy initiative:

Enforcement of regulations

The National Environmental Management: Act (NEMBA) (10 of 2004) (RSA, 2004), and its Regulations prescribes substantial powers to the authorities and strangle hold landowners accountable for invasion of invasive alien plants on their natural assets. Predominantly the strategic position for Working for Water's proposition to work on landowners natural assets is that these commitments must be executed. Specifically, a need to have a well-organized and comprehensive proposition to control specific invasive alien plants in particular areas, and issue directives to landowners to comply with the proposition (Working for Water, 2008:2).

Land-owner contracts

Proprietors are called upon to petition Working for Water for intervention. Where the intervention is dispensed to landowners, an undertaking connecting Working for Water and landowners is signed defining characteristics, responsibilities and commitments. The timing of follow-up control must be completed by the landowners within the timeframe specified by Working for Water in the agreement, or where consensus on revision to the agreement. Omission by the landowners to control invasive alien plants within the stipulated time-frame is taken as a breach of contract, and the land-owner is held accountable for all of the extra costs sustained subsequent to the stoppages (Working for Water, 2008:3).

Where proprietors fail to conserve the natural assets and keep in desirable condition (in terms of the species controlled in this work), Working for Water will be qualified to recoup its full costs, plus interest, or require the land to be cleared, at landowners full cost and risk. In the event that natural assets belonging to landowners that has been cleared of invasive alien plants be sold or transferred in any manner, or the owners be liquidated, the responsibilities associated with the contract agreement is transferred to the new landowners. This is specified in the undertaking connecting Working for Water and the proprietors. Additionally, legal advice is sought as to whether unassailable initiatives are imperative. Landowners are not prejudiced if Working for Water is unfitted to discharge its commitments in terms of the signed agreement (Working for Water, 2008:3).

General conditions for work on private land: Land-owner responsible for management

In locations attainable and is vital, Working for Water make available incentives to landowners to manage invasive alien plants on their natural assets. The landowners are called upon to adhere to compliance management of the contracts on their natural assets, and for all legal requirements related to this responsibility. The landowners may enter into contract with Working for Water contract teams to clear invasive alien plants, this teams will thus be professional service providers to the landowners (Working for Water, 2008:4).

In circumstances wherein non-cooperation by landowners is prevalent, Working for Water may manage the teams on the landowner's natural assets. In such instances, the full expenses (including management costs) and risk are for the proprietors account in accordance with the legislation. Compliance management extends to guarantee the use of herbicides complies with the laws of the land. All risks associated with the work on the landowner's natural assets is the commitment of the landowners, including the risk of wild fires (Working for Water, 2008:4).

Technical advice

Working for Water will provide specialist advice on clearing methods, activity sampling and other aspects relating to the program's norms and standards for contemplation by the landowners. Working for Water may assist the landowners with training and other maintenance that may be imperative in the management of invasive alien plants (Working for Water, 2008:5).

Equipment and protective clothing

The contract teams must wear Working for Water Protective Clothing and Equipment (PPE) and employ suitable equipment to execute the work. The equipment utilised by contract teams is paid off from the capital build-up sum after which it becomes the property of the contract team. PPE similarly becomes the possessions of the individual contract team members after it is paid off from the capital build-up allowance. The landowners recompense the contract team daily tariff agreed upon with the team for the equipment and PPE to cover depreciation, wear and tear, and replacement costs, consistent with those paid by Working for Water for this purpose. The landowners may select to supply the contract team with equipment (Working for Water, 2008:5).

Herbicide incentives

In some cases, the Working for Water Program may provide the herbicides required to for the work to be executed. Nevertheless, this is implemented for initial clearing, and a further three follow-up clearing implementation. The herbicide is supplied and monitored by NRM unit in line with the policies that guide the proper handling and use of hazardous chemicals. The usage of these herbicides provided is audited at end of the year to establish amount handed down vs. supplied, and any savings carried over to the next year of implementation as opening stock (Working for Water, 2008:5). Herbicide must be understood as a chemical agent mostly used for killing or inhibiting the growth of weeds or undesired plants and in the case of NRM or the LUI program these relate to the invasive alien plants.

Transportation of contract teams

The landowner is responsible for transporting the contract teams at own cost. This may either take the form of the landowner paying for the contract teams transportation or making use of own transport for that purpose. The Working for Water's safety and other requirements must be met (Working for Water, 2008:5).

Planning and mapping incentives

Working for Water is compelled to provide mapping to landowners for planning of clearing operations. Nonetheless, landowners would remain responsible for the final long-term clearing plan (Working for Water, 2008:5).

Data management and reporting

The landowners are responsible for reporting to the Working for Water on all essential milestones measures necessary by the program as specified in the agreement for data management. The reporting template may in this regard be linked to invoices by the landowners for payment. The landowner qualifies to submit a claim for the hectares of land cleared and the number of days an individual has worked as outputs against its expenditure (Working for Water, 2008:6).

Monitoring and evaluation

As a state run program, the Working for Water unit in the then Department of Environment, Fisheries and Forestry (DEFF) monitor and evaluate all the work implemented in terms of the relevant policy. The landowner is obliged to authorise Working for Water or its agents to appraise the work finalized at any time in the future (Working for Water, 2008:6).

Advocacy and communications

Working for Water is also responsible for advocacy and other communication regarding the implementation of the policy. This would, where resources permit, include extension of work to surrounding proprietors to encourage appropriate responsibility and accountability for invasive alien flora on natural assets (Working for Water, 2008:6).

Responsibility for work not prioritised by Working for Water

Completed work on landowner's natural assets with Working for Water's assistance ought to conform to crucial requirements set by the latter, specifically with respect to the invasive alien plants and in particular areas this must be controlled. Nonetheless, landowners may undertake the clearing of invasive alien plants at their own expense (Working for Water, 2008:7).

Research

The Working for Water will undertake research and development initiatives imperative to improve the proposition to work on the landowners' natural assets (Working for Water, 2008:7).

Provision for additional natural resource management agreements

The agreement connecting landowners and Working for Water may make arrangements for added concurrences relating to natural resource management, including:

- Wetland management (in collaboration with the Working for Wetlands program);
- Wildfire management (in collaboration with the Working on Fire program);
- Land management (in collaboration with Land Care);

- Species and ecosystems protection (in collaboration with protection agencies and private Organisations); and,
- Other aspects and collaborators.

These concurrences make arrangements for district and local authority collaboration and support, including through the application of rates and other stimulus and deterrent, as well as be considered on a case-by-case basis (Working for Water, 2008:7).

Refusal to assist private land-owners to clear invasive alien plants

Working for Water may not assist the landowners with further support on occasions where the natural asset had been re-invaded with the same invasive alien plants which had been cleared in the past by either by Working for Water or other state-run organizations.

Right to withdraw support to private land-owners to clear invasive alien plants

Working for Water uphold the right to pull out contribution should the landowner not stick to the provisions of the contract, including probable human rights abuses involving the contract teams or Working for Water staff. The landowner is similarly protected in terms of any abuse by the contract teams (Working for Water, 2008:7).

The 2013 LUI Program draft policy echoes the same sentiments which were raised in the Working for Water Circular of 2008 but revealed that although projects particularly directed at the management of invasive alien plants, rehabilitation and maintenance of natural assets and value-added industries from invasive alien plants and bush encroachment will be contemplated , the intention is to increase proficiency within Natural Resource Management to facilitate the development of norms and standards for other Natural Resource Management's special projects (DEA, 2013:2).

3.4 Conclusion

This chapter provided a detailed description of available legislation and required compliance regarding the PPP and the management of the Working for Water program's processes and procedures. The section alluded to the fact that legislative mandate clearly stipulates why the State should ensure that ecological infrastructure assets are developed and maintained. It further provided the regulatory framework under the National Treasury PPPs examined in the context of regulatory foundation. It is worth noting that the LUI, although still a draft, is being

implemented in Natural Resource Management. As expounded upon, it comprises of certain components of PPP and responds to the missing components sought from key informants which will be presented as part of the findings. The chapter also presented the rights and responsibilities of key stakeholders in the WfW program. The next chapter below will venture into the depth of the case study and assess the viability of applying the PPP model in the LUI in the NRM sector.

CHAPTER 4: CASE STUDY: THE GROOT MARICO

4.1 Introduction

This chapter seek to provide a detailed analysis of the study area and its geographic features and location.

South Africa's surface area is said to fall into two major physiographic features. These are the interior plateau and the land between the plateau and the cost. Each location therefore has peculiar features which are non-identical to the other.

This chapter therefore set out to outline the landscape feature of the research location or case study. Prominent ecological infrastructure assets arising from the physical characteristics will also be explored. The chapter will further provide a summary of the roles in terms of the institutional arrangements available for the management, monitoring and evaluation of ecological infrastructure assets.

4.2 The physical characteristics

The visible features describe the natural environment of a place, and for purposes of this research incorporate, the explanation of weather and climatic conditions; soil; vegetation cover; minerals; as well as landforms and water bodies (National Geographic Society, 2015).

There is a direct interrelationship with the physical characteristics of an area. Therefore, it is appropriate that the necessary environmental precautions are taken when persons engage in aspects of development. In this instance, the development and maintenance of ecological infrastructure assets.

4.2.1 Climatic conditions

The Oxford Dictionary defines climate as the general weather conditions prevailing in an area. A locality weather is contrived by its elevation, terrain, and altitude, as well as nearby water bodies and the currents. Climates can be classified according to the average and the typical ranges of different variables, most commonly temperature and precipitation. Climate is different from weather in that it only describes the short-term conditions of these variables in a given region.

Figure 4.1 below illustrates the climatological information of the study area in normal values based on monthly averages and in accordance with World Meteorological Organisation (WMO) prescripts.

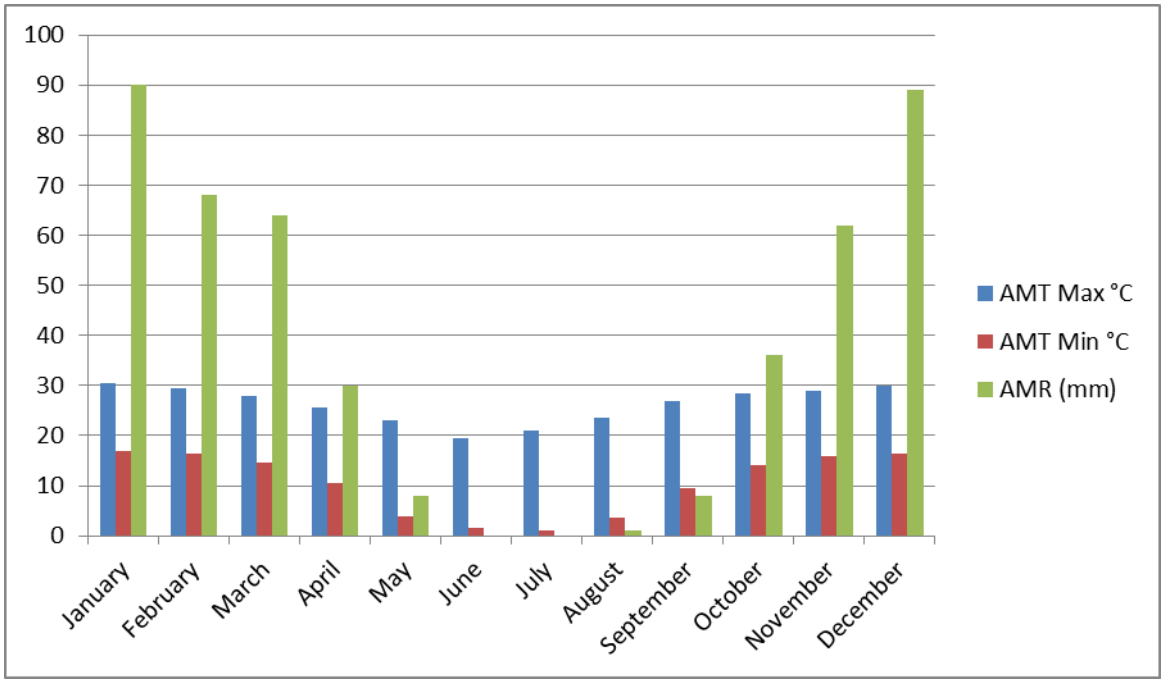

Figure 4.1: Climatic conditions of the study area
Source: Adapted from SA Explorer (2014)

Key: AMT Max – Average Monthly Temperature (Maximum) in degrees Celsius
AMT Min – Average Monthly Temperature (Minimum) in degrees Celsius
AMR (mm) – Average Monthly Rainfall (in millimetres)

The graphic representation of the climatic conditions above reveals that the distribution of average monthly maximum temperatures demonstrates the normal noon temperatures for Groot Marico range from 19.6°C in June to 30.5°C in January. The district is coldest during July where average minimum temperature falls to 1.1°C.

It can be concluded that Groot-Marico generally experiences approximately 469mm of rain per year, with most rainfall falling during mid-summer. The amount of rainfall in Groot Marico is slightly above the national average which is cited by Brand South Africa (2015: Online) as approximately 464mm per annum. Although the amount of rainfall is above the national average, it does expose the region's vulnerability to adverse conditions such as drought. There is therefore a need to conserve the regions' water resources as ecological infrastructure.

4.2.2 Vegetation cover

An areas vegetation cover is an ecological infrastructure asset because it provides ecosystem goods and services, for example, carbon storage, regulation of climate as well as bio-prospecting (South African National Biodiversity Institute (SANBI), 2014:5). The map below illustrates the different vegetation types which constitutes the study area.

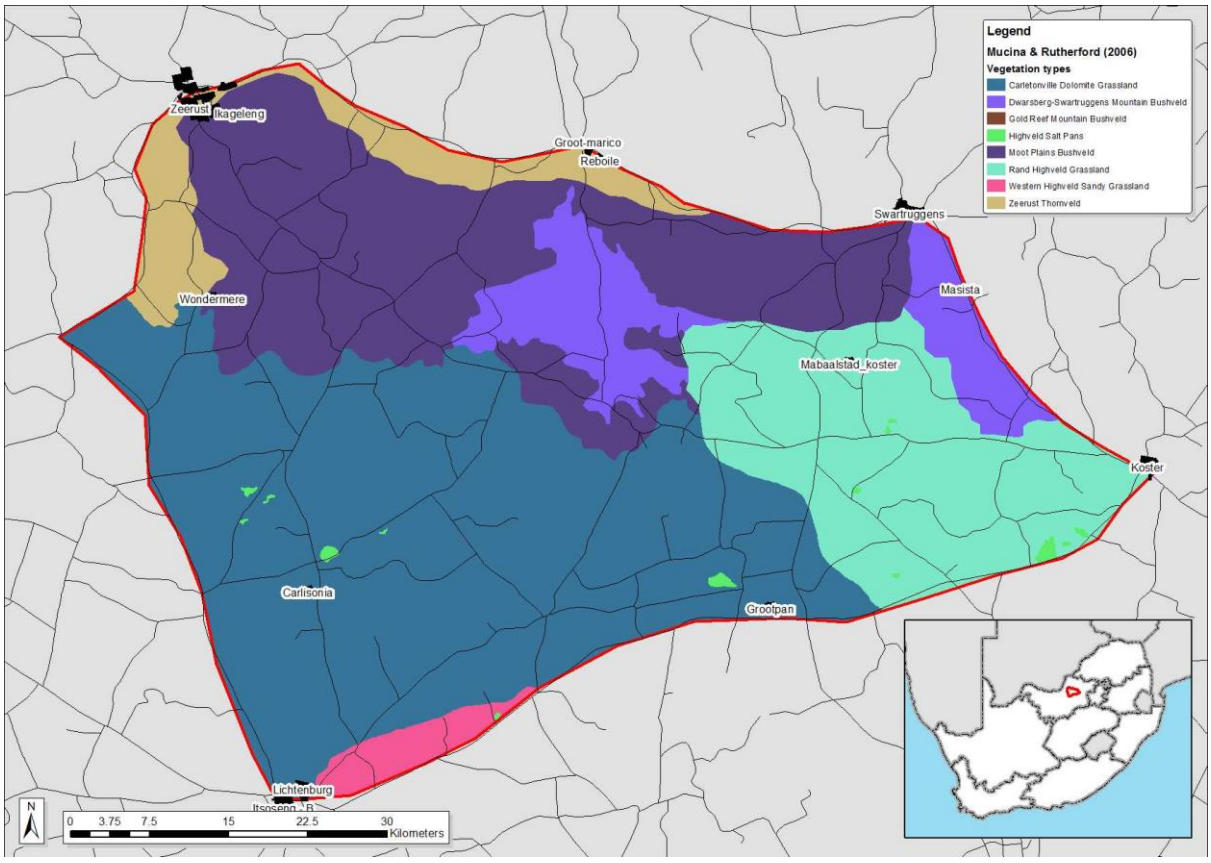

Figure 4.2: Vegetation map of the study area
Source: Mucina & Rutherford (2006)

Figure 4.2 above illustrates that the Groot Marico district is dominated by a Mixed Bushveld vegetation type. The vegetation varies from Dwarsberg-Swartruggens Mountain Bushveld, Moot Plains Bushveld to Zeerust Thornveld including Highveld grasslands found at the far south of the study area. The River Health Program (2005:11) cited by Low and Rebelo (1998) conclude that these types of vegetation were established in district where the rainfall differ between 350 and 650 mm per annum. The altitude encompasses of low relief plains at an altitude range of 700 to 1000 meters above sea level.

4.2.3 The soil condition

According to the River Health Program (2005:11), the study area is dominated by common to extensive clayey loam soil. Most of the clayey loam soils, specifically, is appropriate for commercial agriculture where there is adequate water. That notion is supported by the pictorial depiction of agricultural activities along the Groot Marico River as illustrated in the aerial photograph below.

Figure 4.3: Agricultural activities along the Groot Marico River
Source: AfriGIS (2015)

Figure 4.3 above illustrates that there are certain notable agricultural undertakings along the Groot Marico River which in turn supports the River Health Program (2005) concluding remark that the soil type is highly suitable for commercial agriculture. Table 4.1 below is a summary of the farming undertakings in the Ngaka Modiri Molema District Municipality.

Table 4.1: Agricultural activities in the Ngaka Modiri Molema District Municipality

Management Information					
Commodity/ Enterprise	Ngaka Modiri Molema District Municipality				
	Ramotshere Moiloa	Ditsobotla	Mafikeng	Ratlou	Tswaing
Citrus	X	X	X	X	X
Perennial Crops					
Figs					
Pomegranate	X			X	X
Prickly pears	X		X	X	
Olives	X	X	X		X
Pecan nuts	X	X			X
Table grapes	X	X		X	X
Vegetables	X	X	X	X	X
Grains					
Maize	X	X	X	X	X
Sunflower	X	X	X	X	X
Sorghum	X	X	X	X	X
Wheat	X	X	X		X
Soya					
Livestock					
Goat meat	X	X	X	X	X
Beef	X	X	X	X	X
Broilers			X		
Ostriches	X	X	X	X	X

Shaded cells indicate irrigated crops

Source: Adapted from management information kept by Agri NW (2015)

It can be concluded from Table 4.1 above that there are discernible number of agricultural activities in the Ramotshere Moiloa Local Municipality where the study was conducted. These agricultural activities take the form of irrigated as well as non-irrigated crops and livestock farming. Vegetables have always been part of the food production mix in Groot Marico. Recent cost implications have seen a noticeable reduction in produce at the market (Marico River Conservation Association (MRCA), 2015: 1-3).

Game farming as part of the agricultural mix has seen steady growth over the past decade. This conforms to the national trend and is further enhanced by the tourism aspect as well as the prices acquired for game. This aspect of the farming mix is still relatively new in the area, and has potential in that it is a lower cost operation with minimal employment requirements. Given the high prices for game, the return on investment from this type of farming is very high.

4.2.4 Landform

The North West Province is generally characterised as having the most uniform terrains of all the South African provinces, with an altitude ranging from 900 – 1720 metres above mean sea level (North West Provincial Government (NWPG), 2002:14). The research district is situated within the north eastern portion of the North West Region, characterised by undulating plains with scattered and parallel hills and lowlands, while the eastern side is more mountainous and includes the scenic Magaliesberg Mountain (NWPG, 2009:23).

The River Health Program (2005:11) highlights that the land form in the research district differs from plains which have a common to low relief to more complex lowlands, to closed hills and mountains with relief varying from moderate to high. Norman and Whitfield (2006:189) concur with this description. In their view, as one approaches Groot Marico, the Timeball Hill makes a gentle undulating slope.

When trying to establish the interrelationships with other physical characteristics, one can relate the landform with the vegetation cover of the study area in that it is dominated by the Dwarsberg-Swartruggens Mountain Bushveld and Moot Plains Bushveld as previously highlighted.

SANBI (2014:5) highlighted landform as one of the ecological infrastructure assets which influences environmental products and amenities such as bio-prospecting, water provision, flow regulation, ecosystem resilience as well as recreation.

4.2.5 Water bodies

Rivers, mountain catchments and wetlands are included in the of Ecological Infrastructure Assets definition as detailed in Chapter 1. The Groot Marico River is the primary focus of this study and is described in detail because its ecological status has necessitated the utilisation of the LUI.

The Groot Marico River is illustrated below and highlights the status of 'critically endangered' within the vicinity of the Groot Marico.

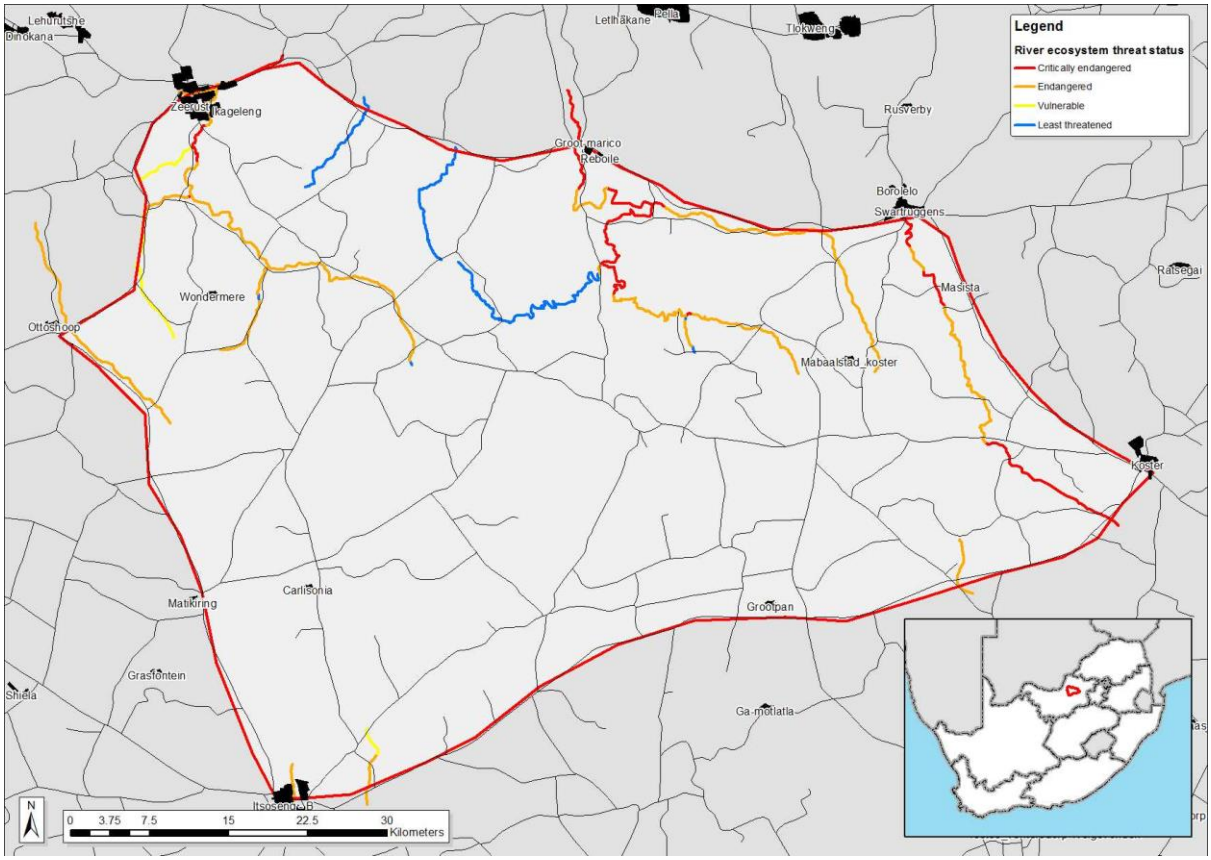

Figure 4.4: River ecosystem threat status
Source: ArcView (2015)

According to the River Health Program (2005:15), the Groot Marico River is fed by a number of springs within the Groot Marico. According to the River Health Program (2005:48), the Groot Marico River is pompous to farming return flows and water extraction because there are numerous farm dams and old furrows adjacent to and within the river channel.

There is also existence of alien vegetation, for instance, different species of Wattle, Blue gums, Seringa, Poplars and Spanish reed. In summary, the River Health Program (2005: 48) recommended clearing alien vegetation as one of the key river ecosystem management responses.

In implementing the management responses recommended by the River Health Program (2005:48), the Natural Resource Management program introduced the LUI to contend with, amongst others, invasive alien species.

4.3 Human characteristics

The human characteristics describe the people of a place in terms of their population distribution; community based and profitable enterprises; as well as the tempering to the native environment (National Geographic Society, 2015).

4.3.1 Demographic profile and trends

Table 4.2: Key Statistics 2011

Total population	150,713
Young (0-14)	32,9%
Working Age (15-64)	59,7%
Elderly (65+)	7,5%
Dependency ratio	67,6
Sex ratio	94,5
Growth rate	0,92% (2001-2011)
Population density	21 persons/km2
Unemployment rate	36,2%
Youth unemployment rate	45,8%
No schooling aged 20+	20,7%
Higher education aged 20+	6,4%
Matric aged 20+	21,1%
Number of households	40,740
Number of Agricultural households	14,371
Average household size	3,6
Female headed households	46,1%
Formal dwellings	81,5%
Housing owned/paying off	70,1%
Flush toilet connected to sewerage	22,3%
Weekly refuse removal	19,7%
Piped water inside dwelling	19%
Electricity for lighting	81,9%

Source: Statistics South Africa, 2011

The statistics illustrated in Table 4.2 above revealed that the Groot Marico is a small town. However, the effects of an unemployment rate of 36.2%, for a small town this is devastating. It is worse when youth unemployment is higher at 45.8% which may result in migration of the

working age to cities. The introduction of a labour-intensive LUI program (DEA, 2013) at the Groot Marico could prove significant in minimising the above-average unemployment rate.

4.3.2 Land uses

The dominant land use in the Groot Marico is agriculture which in this instance includes farming at all levels, for example, game, crop and livestock farming. This is a common occurrence in areas dominated by private land-ownership. Consequently, Natural Resource Management (NRM) saw a need to introduce incentives for the management and maintenance of ecological infrastructure assets.

Other land use which dominates the area is residential which comprises of forty thousand, seven hundred and forty (40 740) households less fourteen thousand, three hundred and seventy-one (14 371) which are regarded as agricultural households (Statistics South Africa, 2011). Agricultural households are excluded from the total number of households because these have already been included in the dominant land use, which is agriculture.

Integrated in the residential land use are the following complementary land uses: institutional land uses which comprise of a police station, schools, churches, clinic and offices; open spaces for recreation such as parks, sports fields, etc.; and commercial sites such as shops.

4.3.3 Economic characteristics

According to the Ramotshere Moiloa Local Municipality (2015:14), the district profitable undertakings is influenced by advanced profitable pursuit including retail trade and amenities. There are certain manufacturing and services sectors in the town of Groot Marico.

According to the Marico Information Centre (2015), primary sector activities include agriculture at various scales associated with a major irrigation scheme supporting farmers along the Groot Marico River. Furthermore, there are a myriad game farms which contributes towards the local economy through tourism, namely: ecotourism and cultural tourism, which was developed from a very modest beginning during the late 1980s.

The Ramotshere Moiloa Local Municipality (2015:14) also highlighted that as other small predominantly rural municipalities, the municipality had, during 2009, only contributed approximately 0.1% towards the national economy.

4.4 Notable Ecological Infrastructure Assets

The Marico Eye is a major ecological infrastructure asset in the study area and a source of the Groot Marico, which in turn feeds the Limpopo River. The Groot Marico is a perennial river and has hardly ever run dry as recorded in recent history (Ayerst, 2008:27). According to the Marico Information Centre (2015), the Eye is 17 meters deep and 40 meters wide.

The water is entirely pure and the river catchment area around the pools is still pristine today. Aware of the significance of their single most important ecological infrastructure asset, the residents of Groot Marico have fought against a mining company which intended to mine nickel within the vicinity of the Eye which is popular for swimming including both day and night dives (Marico Information Centre, 2015). The Marico Eye also boasts certain aquatic life such as black bass, fresh water prawns, fresh water eels and Kurper (Ayerst, 2008:27).

The lack of industries implies an unpolluted environment, fresh air as well as clean water. More than five veld types in the Marico, as illustrated in Figure 4.2, reveal the large ecological diversity which is reflected in the presence of the second highest occurrence of bird species in South Africa. More than 430 bird species have been identified and approximately 200 indigenous tree species. The areas natural beauty is an asset with interminable possibilities. Furthermore, most land-owners have started exploiting those possibilities with ecotourism (Van Bart, 2015). This is supported by the River Health Program (2005:48) which reveals that development in the Groot Marico region is low and the land is dominated by natural vegetation.

4.5 Institutional arrangements

As alluded to previously, the Groot Marico River is the primary ecological infrastructure asset around the study area upon which the LUI program is implemented. The institutional arrangement thus included herein are only those which are considered key in the development and management of the area's aquatic environment and ecology.

The Department of Water and Sanitation, as the legitimate curator or custodian of water assets in the country, played a leading role in initiating and designing the RHP in response to the necessity to monitor, evaluate and report on the ecological status of river ecosystem (River Health Program, 2005: 3).

With regard to the National Water Resource Strategy, the authority separate Water Management Areas (WMA). The research location falls within the Crocodile (West) Marico

WMA. The WMA has since been incorporated into the Limpopo-North West Catchment Management Agency thus established by the Minister of Water and Environmental Affairs (RSA, 2014b).

According to the River Health Program (2005:20), the expected part of the Catchment Management Agency in the RHP is that of harmonizing at a watershed segment connecting regions and relevant state run organizations.

Within the study area, the North West Department of Agriculture and Rural Development is the River Health Provincial Champion responsible to ensure the implementation of the program in the province as well as harmonize monitoring programs with regions neighbours. The champion is also responsible for reporting back to the National Coordinating Team. The RHP occurs primarily in the context of the State of Environment reporting obligation of the provinces. In producing the report, the River Health Champion works with municipalities, research institutions and the private corporate sector, most notably mining, industry and agriculture (River Health Program, 2005: 20).

The relationship established between the River Health Champion and the stakeholders listed above is mainly for management responsibilities in regard to the quality of water assets as detailed below:

- agricultural return flows: Department of Water and Sanitation; Department of Agriculture, Forestry and Fisheries; organised farming and farmers are both required to upgrade their implementation in order to minimise contamination of the water assets;
- industrial discharges: Department of Water and Sanitation; and industries have a responsibility to stick to licence constrains and take responsibility for the wellbeing of the water assets; and
- sewage spills and discharges: Department of Water and Sanitation; and local authorities have a responsibility towards the upgrading of the sewerage systems and improvement of their management.

The integrity of the in stream habitat is vital to maintain a healthy river system. Environmental flow preconditions are set as a segment of an ecological reserve determination. The River Health Program (2005:48) suggested additional management responsibility connected to in stream domain integrity which includes the control of in stream alien species which is the liability of regional environmental affairs, coincidentally the River Health Champion.

4.6 Conclusion

The geographical characteristics detailed above revealed that all the local economic activities are centered on the single most significant ecological infrastructure asset, that is, the Marico Eye which gives rise to the Groot Marico River. Being the main contributor to the local economy, this ecological infrastructure asset requires protection from a variety of threats. The institutional arrangements described above reveal how various institutions intend or are mandated to ensure the sustainability of that ecological infrastructure asset.

The next chapter will present, analyze and interpret field data gathered during the study.

CHAPTER 5: METHOD OF RESEARCH, FINDINGS AND ANALYSIS

5.1 Introduction

This chapter dispenses a scanty background of the research methodology taken to gather and analyze data. The chapter further presents the findings of the field work undertaken through semi-structured interviews (examination, key informant interviews and target group deliberations) as highlighted in Chapter 1. The facts reflect the respondents' perspectives of the LUI program (DEA, 2013), both from a socio-economic and administrative or regulatory perspective.

Based on field data, the data is interpreted and the LUI program (DEA, 2013) described in terms of its Strengths, Weaknesses, Opportunities and Threats (SWOT) in order to explore how it compares with other PPP models and its effectiveness as a procurement method to build and maintain the ecological infrastructure in Natural Resource Management. The difference between the LUI and conventional supply chain management or procurement processes will be explored through the gathered field data.

5.2 Method of research

5.2.1 The subjects

The research was conducted among persons who had in one way or another participated in the LUI program namely: employees of the Marico River Conservation Association (MRCA), a LUI implementer in the Groot Marico area as well as land-owners, interested and affected parties in the program and natural resource managers in both the Cape Town and North West offices. The research explored the various forms of PPP models, including the advantages and disadvantages to enable the provision of recommendations; most appropriate model that NRM can adopt in pursuit of maximizing the LUI into a PPPs policy model guided and supported by prevailing legislative framework.

5.2.2 The research design

This case study investigated or explored scholarly written work on PPPs to comprehend the subject. Furthermore, the survey in the form of a questionnaire was administered to the Marico

River Conservation Association employees, private land-owners and the Natural Resource Management Program managers.

5.2.3 Data collection procedure

Surveys in the form of questionnaires distributed among a group of sample subjects were utilized to gather data. The survey gathered information on the benefits associated with the implementation of the LUI program. Furthermore, the respondents included a group of Natural Resource Management (NRM) managers who spoke of their experiences on the LUI and expressed views of PPPs.

a) The survey

Questionnaires: A target group discussion and principal informant discussions were utilized to gather data. The rationale for selecting the questionnaire was explained in detail in Chapter 1 as the most effective method for a social survey enquiry wherein the subjects' ideas, experiences and opinions are solicited, while the target group extracts personal experience from individuals through group interviews and principal informant discussions included prepared questions to structure conversations with specialists on the subject. In this regard, questionnaires were utilized to gather facts on the socio-economic impact of the LUI whilst focus group- and key informant interviews were meant to collect facts on the administrative compliance to the LUI program.

The socio-economic survey investigated a number of variances to elicit data from the respondents and in turn acquire the desired results, and participation in the LUI program which included land-owners, project managers and employees. This was to determine whether the implementation of the LUI responds to the three-fold socio-economic challenge of poverty, inequality and unemployment that faces the country as a whole and the Groot Marico community in particular.

On the other hand, administrative compliance facts were gathered from LUI managers across the different regions of the Department of Environmental Affairs (now Department of Environment, Forestry and Fisheries throughout the country through principal informant and target group discussions.

b) Sampling

A non-probability sampling method, that is, judgmental sampling was utilized because the rationale was to focus only on subjects who had participated in the projects. Consequently, the total size of the population from which facts were gathered was limited.

c) Sample size

To determine the socio-economic impact of the LUI, a sample of thirty-four (34) participants was selected from a population of fifty-nine (59) respondents in the Groot Marico as detailed in the illustrated table below.

Table 5.1 below summarizes the respondents' profile for the empirical section of the study.

Table 5.1: Summary of respondents by designation: LUI program

Manner of participation	No of questionnaires returned	Total population	Percentage of questionnaires returned
Land-owner	14	17	88%
Project manager	3	3	100%
Employees	17	39	44%
Total	34	59	77%

Eighty-eight per cent (88%) of the land-owners participated in the LUI survey and 44% of the employees responded. Furthermore, feedback was received from 100% of the project managers responsible for the three teams, and each comprised of thirteen employees, who cleared invasive alien plants in the study area under the LUI program.

From the above sample, the respondents were further profiled in terms of gender, age and extent of schooling as detailed in Table 5.2 below.

Table 5.2: Respondents' gender profile

Gender	Land owner	Percentage landowners	Project Managers	Percentage Project Managers	Employees	Percentage Employees	Total Respondents	Percentage total respondents
Male	8	57 %	0	0%	10	59	18	53%
Female	6	43%	3	100%	7	41	16	47%
Total	14	100%	3	100%	17	100	34	100%

It can be inferred from the above table that 47% of the participants were female and 53% male. The above table further reveals that all project managers on site in the Groot Marico are females although the majority of the employee participants (59%) were males. Female employees lag behind by 41% which implies that the clearing activities of the LUI program are not necessarily gender sensitive and as a result both male and female may do the work required.

Table 5.3 below will present the number and age of the respondents

Table 5.3: Respondents age profile

Age bracket	Land owner	Percentage of land owners	Project Managers	Percentage of Project Managers	Employees	Percentage of Employees	Total respondents	Percentage of total respondents
15 - 35	5	36%	2	67%	7	41%	14	41%
36 - 60	4	28%	1	33%	10	59%	15	44%
Over 60	5	36%	0	0%	0	0%	5	15%
Total	14	100%	3	100%	17	100%	34	100%

Table 5.3 reveals that 41% of the participants were youth, while 15% were over the age of 60. Further analysis revealed only land-owner respondents form 15% of the non-youth respondents and fall in the over the age of sixty (60) years bracket. It can be concluded that the LUI program, like many other employment opportunities is characterized by the middle-aged and the youth. The turnout by old aged land-owners may well be interpreted to imply that certain land-owners have been in the field long enough to share valuable insight on the state of affairs before the introduction of the LUI program.

Since 41% of the employee participants were youth it could be inferred that the LUI program is well-placed to inhibit youth unemployment, which according to the 2011 household census (Statistics South Africa, 2011), was an astounding 48.5%. Two of the three project manager respondents were youth. Therefore, the LUI program could serve as a sound platform to groom youth into leadership positions. This also demonstrates that LUI does not present many barriers for youth leadership within the operational teams.

Table 5.4 below illustrates participants' educational profile.

Table 5.4: Participants' educational profile

Level of education	Land owner	Percentage of land owners	Project Managers	Percentage of Project Managers	Employees	Percentage of Employees	Total respondents	Percentage of total respondents
Primary	0	0%	0	0%	2	12%	2	6%
Senior Certificate	8	57%	1	33%	8	47%	17	50%
National Diploma/ Degree	4	29%	1	33%	4	24%	9	26%
Postgraduate	2	14%	1	33%	3	17%	6	18%
Total	14	100%	3	100%	17	100%	34	100%

Table 5.4 data above reveals that the majority (47%) of employee participants have a senior certificate and no post-school qualifications. The LUI thus serves to a significant extent the unskilled bracket of the labor market thus bridging this bracket with the semi-skilled in the communities. This is further illustrated that 33% of the project manager respondents all fell within this educational bracket, that is, a project manager only has a senior certificate qualification. With skills development built into the LUI program, there is evidence that a senior certificate as a participant could gain experiential knowledge and elevate themselves to leadership roles.

For the administrative compliance survey, a sample size of ten (10) NRM managers was selected as key informants from a population of fourteen (14) managers across the country. Thus, the administrative findings presented in the discussion represents the views of 71% of the NRM managers. The NRM managers are officials in the Department of Environmental Affairs who manage the implementation of the LUI program.

5.2.4 Data analysis

The impact analysis procedure was utilized to analyze the socio-economic data collected while a comparative analysis was utilized to scrutinize the administrative facts gathered through principal informant discussions and target group discussions. The result is the presentation of socio-economic and administrative compliance findings below.

5.3 Research findings

The field data was collected to describe the socio-economic impact of the LUI and to determine whether the program, as a policy instrument, had passed the test administratively in terms of South Africa's regulatory framework of PPP.

5.3.1 Socio-economic impact of the LUI

As described in 5.2.3 above, three sets of LUI participants were approached to gather data related to the socio-economic aspect of the LUI program. Table 5.5 below illustrates the responses solicited from the proprietors. As explained earlier, the proprietors are persons whose land was inhabited by alien vegetation and scoured under the LUI.

Table 5.5: Land-owner survey results

Question	Answer	Number of responses	Percentage
	Media		
	Through others	14	100.00%
2.1 How did you learn about the Land User Incentive Programme?	Own initiative		
2.2 Do you have an agreement with the Department of	Yes	12	86%
Environmental Affairs in relation to the LUI?	No	2	14%
	Yes	11	79%
	No	1	7%
2.3 Is there clear breakdown of roles in terms of the agreement?	N/A	2	14%
2.4 What is your role in the project? (Specify)……..			
2.5 What are the future plans in terms of the agreement (what happens after completion of the project)? (Specify)…			
	DEA	1	7%
	Land Owner		
	Both	12	86%
	Don't know	1	7%
2.6 Who is funding the project?	Others…..		
2.7 What are the benefits associated with the project? (Specify) ...			

A combination of open-ended and close-ended questions was posed to the proprietors. There is evidence that the LUI program had been publicised amongst the landowners by word of mouth. All (100%) the landowners respondents confirmed that they had heard of the Land Use Incentive program from other landowners. It can be inferred that the LUI program has a positive effect assuming that land-owners would only share information of the program if they had observed a positive impact on their natural assets. The risk with this finding is, however, that there could be landowners who would benefit greatly from the program but may not have

aware thereof unless the community is so closely knit that this medium of communication would bring the desired results.

On the question of whether there are bilateral agreements connecting the Department of Environmental Affairs (now Department of Environmental, Forestry and Fisheries) and landowners, 86% confirmed that these are as such and a further 79% revealed that the agreements give a comprehensible summary of roles and responsibilities for the duration of the project. Therefore, it can be concluded that the LUI program is well-structured with possible standard contracts to facilitate the swift implementation thereof.

Varied responses were obtained from open-ended questions. However, there was a common understanding that the land-owners would be responsible for future invasions in terms of the agreements they had entered into with the Department of Environmental Affairs. Land-owners also perceive themselves as playing a contributory role in the LUI program (DEA, 2013). On the other hand, the land-owner respondents revealed that the program assists them to meet their conservation targets.

Since the land-owners perceive themselves as individuals with a passion to work the land, they revealed that the program assisted them to follow their passion for conservation and are now able to remove or control invasive alien species which are considered to be abnormal consumers of water resources. The land-owners find the program beneficial in the sense that it helps to conserve their water resources and improves the productivity of their land. The land-owners conceded that in a water scarce country such as South Africa, it is always necessary to try all available means to conserve the scarce water resources.

Another significant finding from the land-owners was the clearing of invasive alien plants which had made productive land available. The land-owners have been able to create jobs for the local community through more extensive agricultural activities which they are now able to undertake and also meet their own socio-economic needs. The land-owners further conceded that the program has brought about a sense of social cohesion in that locals are allowed access to private properties, build relations and establish mutual respect between the parties. The levels of petty crime have declined in the area, which is attributed to increased youth employment through the program.

Eighty-six per cent (86%) of the land-owner participants also indicated that both proprietors and the Department of Environmental Affairs are responsible for the LUI program clearing and funding of the invasive alien flora. As a result, the program is making progress in unlocking

non-public organizations' funding to a function that had historically been funded solely by the state-run organizations. The lasting effect hereof is that the state-run organizations' funding would go a long way in reaching additional proprietors than it would have if not subsidised by non-public organizations on this co-funded initiative to clear activities under the auspices of the LUI program.

Table 5.6 below provide a summary of the responses from the projects managers to the questions presented in the table.

Table 5.6: Responses from project managers

Question	Answer	Number of responses	Percentage
3.1 How did you learn about the Land User Incentive Programme?	Media	1	33.33%
	Through others	1	33.33%
	Own initiative	1	33.33
3.2 What is your professional relationship the Department of Environmental Affairs (DEA)?	Employee	2	66.67%
	Service provider		
	Other……	1	33.33%
3.3 If service provider, are you registered in the DEA database of service providers?	Yes		
	No		
	Don't know		
	N/A	3	100%
3.4 Did you undergo any special training to become a Project Manager?	Yes	3	100%
	No		
3.5 Who funded the training?	DEA	1	33.33%
	Own funds	1	33.33%
	N/A		
	Others…..	1	33.33%
3.6 What does it take to become a Project Manager?	Experience		
	Training		
	Both	3	100%
	Others…..		
3.7 What is your overall role in the project? (Specify)...			

It can be gathered from Table 5.6 above that unlike with the land-owners, the media has also played a role in publicising the LUI program because a third of the project managers respondents learned of the LUI from the media. It still appears that word-of-mouth is relevant because another third had heard of the LUI program from others.

On the question of the relationship between the project managers and the Department of Environmental Affairs, 67% of the project managers held that their relationship with the Department is one of an employer and employee, while a third perceived themselves as partners to the Department. These differences in views may imply that the relationship is not clearly defined or whether the Department treats project managers as employees. The project

manager is someone who leads a team that clears invasive alien plants under the auspices of an implementing agent. There should not be this level of uncertainty, especially from a team leader. The LUI program should define these relationships clearly.

The research also revealed that all the project managers participants had undergone special training, which implies that the requirement for skills development within the program had been met adequately. With skills development built into the program, a case can be made that this element of the program has attracted youth, the majority of whom are unskilled and/or inexperienced. While certain persons perceive the LUI program as a stepping stone to better opportunities, others might consider it as a long-term employment or career path because future growth in terms of skills is primarily certain.

The discussions also brought to light that this training program is funded by different funders. A total of one third of the project managers revealed that the Department of Environmental Affairs funded their training while a third indicated that non-public organizations funding was utilised to provide the training required to become a project manager.

All project manager respondents acquiesced that both experience and training is required to become a project manager. Both experience and training can be gained whilst in the LUI program. In fact, with the training built into the program, there are opportunities to grow within the ranks of the LUI program from a general worker to a project manager. A total of one third of the respondents added that apart from the experience and training, interpersonal skills such as courage, and sense of leadership to become a good project manager are essential.

The study also revealed that the overall role of a project manager is to coordinate employee training as well as to manage the team on site. It can be inferred that training has been made an integral part of the LUI program to such an extent that specific days for training are proactively planned in the work schedule prepared by the project managers.

Table 5.7 below present responses from employees in the case study

Table 5.7: Responses from employees

Question	Answer	Number of responses	Percentage
4.1 How did you learn about the Land User Incentive Programme?	Media		
	Through others	17	100%
	Own initiative		
4.2 How did the employment came about?	I applied	11	65%
	I was hand picked	6	35%
	Other……		
4.3 Did you undergo any skills training in order to participate in the Programme?	Yes	14	82%
	No	3	18%
4.4 Do you have dependants?	Yes	9	53%
	No	8	47%
4.5 Did your participation in the programme improve your financial standing in the community?	Yes	13	76.5%
	No	4	23.5%
4.6 Would you consider the programme as a long term employment?	Yes	15	88%
	No	2	12%

As was the case with the proprietors, 100% of the employee respondents had heard of the LUI program from others. If the media was utilised to publicise the program, it may imply that it is an effective communication tool because many locals rely on each other for information. In that regard, NRM should assess its position and possibly investigate alternative approaches to publicise the LUI program, especially in rural towns such as Groot Marico. The program became popular amongst the non-working group in the area, because 65% had successfully applied for jobs, while 35% were selected to meet the EPWP employment criteria. This target requires that some of the employees, the general workers, in particular, may possess no skill at all, while others may have been semi-skilled prior to participation in the LUI program.

The key LUI program government requirement is skills development. Not only does the program create employment opportunities which in turn result in alleviation of poverty, but also assists with regard to knowledge growth. In the exposition Groot Marico, the research revealed that 82% of the participants had been trained. Considering that 47% of the employee respondents only had a senior certificate, which is also typical of impoverished communities where the majority of the youth acquire the senior certificate and struggle to further their education, the LUI skills development program has proven to be an effective motivator and intensifier. It can be inferred that even if the workers leave the employ of the LUI one day, they would exit it with useful portable skills which they would be able to utilise elsewhere. Therefore, in keeping with the objectives articulated in the literature review, a case can be made that investing in ecological infrastructure assets and skills development has proved to take place with due attention to broader institutional support under the LUI program.

As a result of the employment opportunities gained from the program, 76.5% of the employee respondents revealed that their financial standing in the community had improved. Since 53% have dependants, it can also be implied that the program has assisted the employees towards meeting their social needs and obligations in the community. It was within this backdrop that 88% of the employee respondents revealed that they would accept the LUI program as long-term employment.

The Expanded Public Works Program (EPWP) principles accentuate that gender, various age groups and women specifically must be considered in an effort to talk to the threefold socio-economic challenges of deprivation, inequality and joblessness. The LUI program appears to be proving successful in meeting this political imperative by inhibiting youth unemployment through semi-skilled employment opportunities.

5.3.2 Administrative findings on the LUI

To gather information on the administrative compliance of the LUI program, a number of key informants were interviewed. The key informants who participated in the study included LUI program managers working for the Department of Environmental Affairs and occupying Middle and Senior Management positions in the Natural Resource Management Branch. The managers interviewed are responsible for the implementation of the LUI program in various regions of the country. A total of ten (10) principal informants were posed similar questions using the Key Informants Interview guide (Refer to Annexure 2).

5.3.2.1 Compliance with the Regulatory Framework

The Public Finance Management Act (1 of 1999) (RSA, 1999), as revised, specify that an accounting officer for a department should expand and perpetuate productive and well panned approaches of monetary and risk management including organizational deterrent. Treasury Regulation 16 on the other hand regulates how PPP arrangements should be undertaken by public institutions. To determine compliance with the LUI regulatory framework, a number of key informants were interviewed regarding the approval of the program policy and whether they viewed it as a model of PPPs utilised by the Natural Resource Management Branch.

a) Approval of the LUI policy

Thirty per cent (30%) of the key informants responded that the LUI is not an approved policy for Natural Resource Management while 60% revealed that it is an approved policy. However, those who indicated that it is an approved policy, there were selected respondents who elaborated that they have never seen the actual document and the LUI is just a methodology through which NRM is meeting its strategic objectives.

This ambiguity amongst the program managers exposes the ineffectiveness or inefficiency of the approaches of organizational benchmark and risk management as specified in the Public Finance Management Act (1 of 1999) (RSA, 1999). Section 38 of the said Act stipulates that "the accounting officer for a department must ensure that the department has and maintains effective, efficient and transparent systems of financial and risk management and internal control" (RSA, 1999: Section 38). This general responsibility of the accounting officer can be and is normally delegated to the departmental senior management officials if deemed fit. Approaches to monetary and risk management and organizational benchmark can be included in different forms but not limited to approved policies, procedures and guideline documents. It may well be that certain officials who are charged with the responsibility to provide strategic direction in the Department had failed to understand the value chain within which they operate and indeed should be providing strategic direction in.

The study also revealed that policies in the NRM occasionally remain drafts indefinitely. For example, a draft Land-Owner Policy was implemented and remained 'a draft policy'. More pertinently, it was revealed that the LUI policy is not documented into a working policy although its implementation commenced three years ago.

Although an approved policy had not been implemented, the research revealed that the Department utilizes the provisions of the draft policy to back the execution of a higher level form of organizational benchmark which is the National Environmental Management: Biodiversity Act (10 of 2004) (RSA, 2004). This does not necessarily exonerate the Department from finalising the policy because the Act merely provides the framework within which alien species should be controlled.

Furthermore, the Act cannot be considered as the organizational benchmark and risk management as prescribed by the Public Finance Management Act (1 of 1999) (RSA, 1999), as amended.

b) Is the Land User Incentive a form of a Public Private Partnership (PPP)?

The study revealed that 40% of the principal informants perceived the LUI to be modelled as a PPP. This view is associated with the notion that the private partner often contributes in kind and carries the cost of certain services and items that would ordinarily be the responsibility of Natural Resource Management. For instance, the cost of transporting contract teams. The same key informants would later allude that the LUI is a less formal mode of PPP when compared to the traditional models and, therefore, not subjected to the approval of National Treasury as required by the regulatory framework.

The key informants hold that the Land User Incentive can be considered a PPP model because it meets the following PPP expectations:

- Area of performance associated with projects: 100% of key informants revealed that the LUI has definitely improved the performance of Natural Resource Management.
- Improvements in expenditure - LUI has adopted the Expanded Public Works Program (EPWP) recommendations. EPWP recommendations provide for a state run organization to set a tariff to pay for employees in the labour-intensive projects (RSA, 2005:2). Since the LUI is aimed at the clearing invasive alien plants and alleviate poverty, the EPWP guidelines provide a model which NRM has also adopted as its contribution to manage social challenges facing the country whilst simultaneously meeting its own objectives. In this regard, the principal informants revealed that the LUI has improved job security compared to direct contracting.
- The unlocking of private organizations funding is also perceived as a positive aspect because private organizations collaborators contribute towards the implementation of the agreement and thereby reduce pressure on NRM financial resources. The magnitude or amount of private sector funding could not be determined but only substantiated by land-owner signing agreements to the effect that they are responsible for any invasion that occurs after the initial clearing through the LUI. The LUI as a private organisation may approach potential funders to expand the foot print, diversify operations to include utilisation of biomass for value added products and derive profits using the existing contract as security of investment.

- The risk associated with the implementation of the projects are shifted to implementing agents.
- On the other hand, one key informant conceded that although the delays in terms of teams on the field had improved, the LUI is proving to be more expensive because of management and implementation costs. This notion was raised in Hall's (2008:15) myths about PPPs.

Upon examining the proposed LUI program (DEA, 2013) and the different PPPs models already described, there are a number of similarities between the Land User Incentive and the Management Contract model of PPPs. The model indicates that the private organizations provides a service or manages a contract on behalf of state run organization. Similarly, the LUI uses implementing agents (private contractors) to clear invasive alien plants and persuades landowners to commit and acknowledge responsibility for future invasion.

5.3.2.2 The difference between the LUI and normal procurement processes

The principal informants revealed a number of factors which they believe differentiate the LUI from the normal or conventional acquisition processes found in supply chain management. The following are key differences:

- The LUI program uses contractual agreements that may run various projects for a number of years whereas the conventional supply chain management processes require three (3) quotations each time a project is initiated.
- For the LUI program, an advertisement for *Expression of Interest* is issued. The implementing agents submit their *Expression of Interest* while under the conventional procurement processes an advertisement is issued to request quotations.
- The manner in which funds are disbursed also differs in the sense that the Land User Incentive program disburses funds in advance or before the work is done. However, under the conventional procurement processes, the goods and services are supplied initially followed by the department being invoiced.
- The LUI program uses implementing agents whereas normal procurement processes utilise service providers. Implementing agents in the LUI are considered partners who contribute towards meeting NRM objectives and targets. The implementing agents also contribute their resources as part of their contractual obligations (DEA, 2013).

5.4 Analysis of findings

In the Expanded Public Works Program, the notion of benefits or positive impact is linked to the duration in the employ of such programs measured in person days and interpreted as work opportunities created over that period of time. The report presented in Figure 5.1 below reveals the budget allocation disparities between direct implementation by Natural Resource Management and the utilisation of the LUI as implementers.

A budget of approximately R13 246 162 was allocated for direct implementation under the Independent Development Trust (IDT) projects, while the LUI was allocated a budget of R8 908 475 in the 2013/2014 financial year. Direct implementation of projects costs on average R277.61 per person per day, while the LUI an average of R169.72. The saving is 38%. The study reveals that the person-day costs of implementation under the LUI program is 38% less costly compared to direct implementation. Hence, the potential of savings creates an additional work opportunity. The implementation of projects under the LUI program for the 2013/2014 financial year created approximately 347 work opportunities at 38% less than direct implementation. This is an indication of the efficiency of the LUI program to deliver the same goods and services at reduced costs. The connotation of differences is further illustrated in Figure 5.1 below.

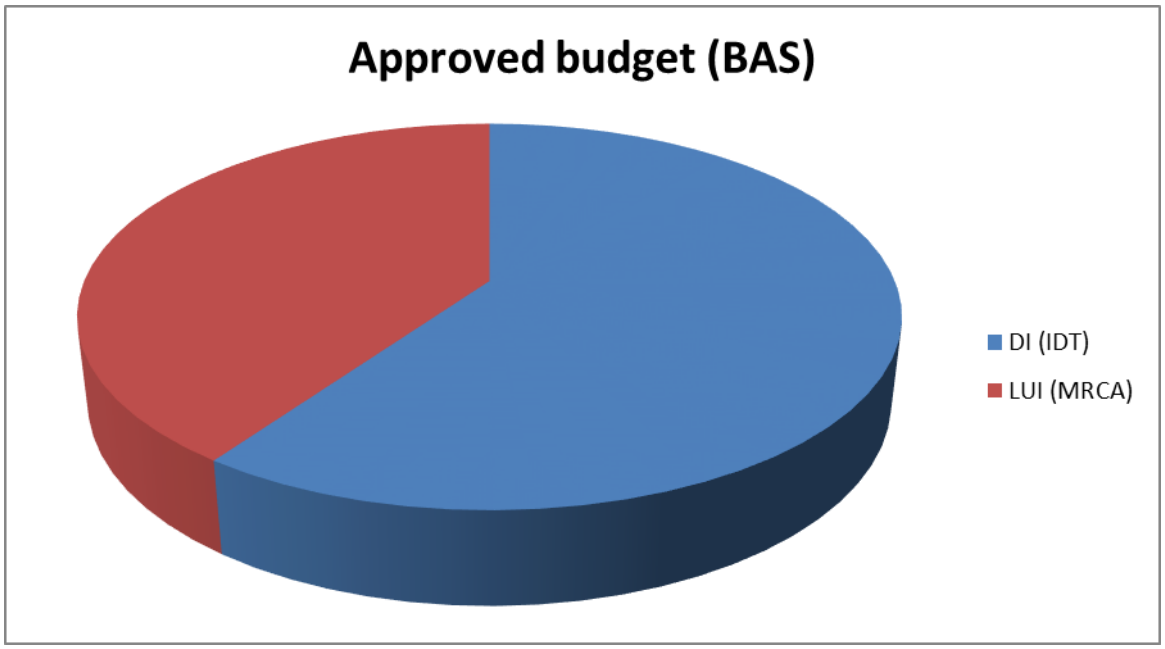

Figure 5.1: Differences in approved budget

Source: Adapted from MRCA (2015:32) and IDT (2013: 2)

From the above it can be deduced that the cost of direct implementation is more than the LUI and that contributes primarily to the differences in budgets. Because these budget requirements are informed by the cost per person day, Figure 5.2 below illustrates the differences in costs per person per day under direct implementation compared to the LUI.

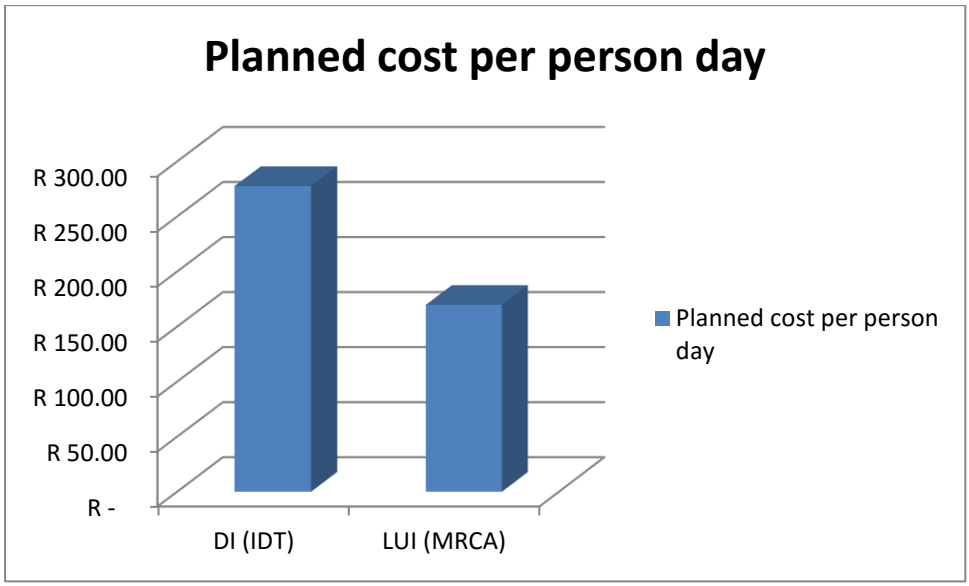

Figure 5.2: Differences in cost per person days in DI and LUI

Adapted from MRCA (2015:32) and IDT (2013: 2)

Effectively, the difference in cost per person day has direct correlation with the budget. However, this also implies that even in instances where the amount of working days and the number of persons employed is equal, there will still be a significant difference in budget requirements as illustrated in Figure 5.3 below.

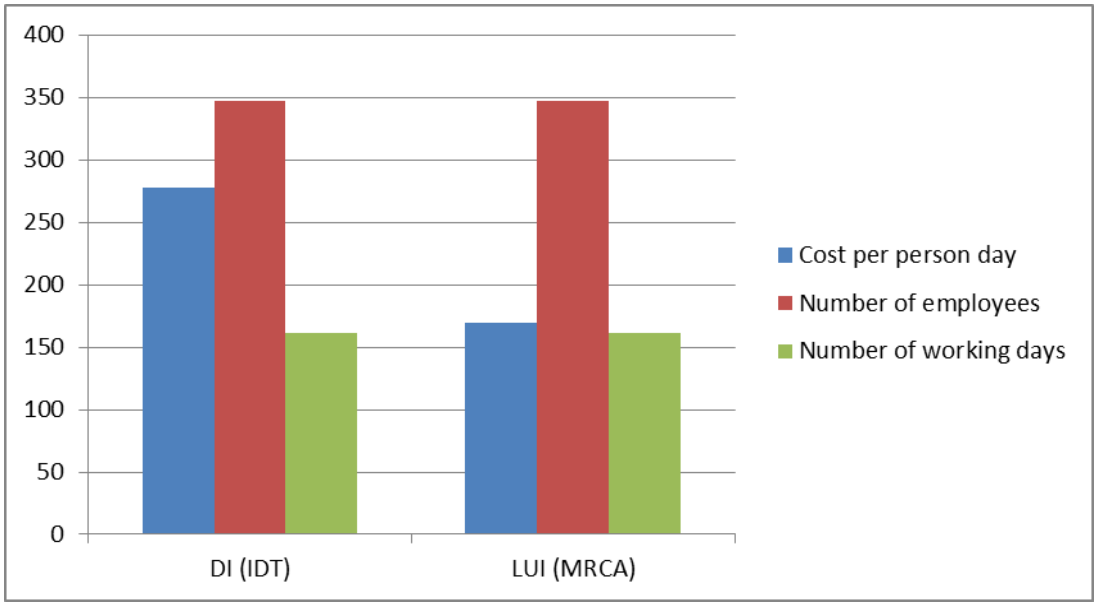

Figure 5.3: Cost per person day, number of employees and number of working days
Adapted from MRCA (2015:32) and IDT (2013: 2)

Figure 5.3 above clearly illustrates that the cost per person per day is the determining factor when calculating the differences in budget allocations. Considering that the cost per person per day is incurred by the (State) Natural Resource Management, there is a significant saving when LUI is employed to clear invasive alien species. It can be inferred that the cost of clearing invasive alien species is 38% lower using the LUI compared to direct implementation. This can also imply that private land-owners contribute approximately 38% of the cost of clearing invasive alien species on their land.

5.4.1 The SWOT analysis

Ideally, new initiatives should be evaluated in terms of their Strengths, Weaknesses, Opportunities and Threats (SWOT) to determine their sustainability, efficacy and/or relevance. That kind of analysis also assists in the decision-making processes.

For example, the scale of weaknesses compared to strengths of an initiative may determine the decision whether to go ahead with the initiative or abandon it altogether. Many instances threats may be turned into opportunities for growth if managed properly. The SWOT analysis enabled one to draw conclusions on the LUI program (DEA, 2013) and provide recommendations in line with the objective of the study.

Table 5.8 below illustrates the LUI under a SWOT analysis based on information gathered from various sources.

Table 5.8: LUI SWOT Analysis

Strengths	**Weaknesses**
• Risk shifts to implementing agents • Ownership and acknowledgement of the problem of invasive alien plants by land-owners • Creation of mass employment opportunities • Improved cost of employment • Quicker turnaround time in delivering NRM mandate • Skills development • Improved achievements of performance targets • Wide outreach to land-owners as NRM does not fund the entire program • Potential private funding • Local community participation and heightened levels of environmental awareness • Complements Man and Biosphere initiative	• Increase in management and implementing costs • Lack of clarity of how the National Environmental Management Biodiversity Act (10 of 2004) (RSA, 2004) Regulations will be enforced • Poor understanding of the LUI concept at implementation level
Opportunities	**Threats**
• The LUI can be developed into a fully-fledged PPP in line with the Regulatory Framework. • Emphasis is on targeting land-owners as partners • Possible partnership funding from the broader private sector • Entrepreneurial Hub (Rural economic development) • Scope for product diversification and value adding from biomass • Contractor development to participate in LUI program (SMME development) • Reduced contract administration by lower level managers • Focus on compliance monitoring by Natural Resource Management	• LUI policy unapproved • Risk of non-enforcement as the policy is not approved • Attraction of audit findings • Threatened emerging contractors and possible mass action • Possible misconception by lower level managers and low morale • Lead times from one contract to the next hampers development

Table 5.8 above reveals that the LUI has many strengths and there is room for improvement which may turn the threats into opportunities for further exploration. For instance, in the process of getting the policy approved, which is a current threat; NRM may need to consult

the National Treasury PPP Unit. The Operations or Management PPP contract model is proposed as a probable model through which the current LUI can be structured because of several similarities in that the private organizations partner is allocated piece of work relating to the organisation and sustenance functions normally executed by the state-run organization as discussed in Chapter 2. The contract management is structured such that the private organization which is paid a fee, take full responsibility of the daily routine sustenance and functions, while the state-run organization focuses on policy compliance monitoring and enforcement of the key competencies of organization. It is for this reason a fully-fledged Management Contract type of PPP model is suggested to attract private organizations investment and operating within prevailing regulatory provisions.

According to Callan and Davies (2013:1-2), limited information is available relative to the scale of joint investments. Consequently, there is an assertion that appears as one of the LUI weaknesses of which the benefits are neither clear nor tangible. The flexibility of support in-kind that is claimed by some principal informants makes it difficult to generally regard it as part of the private organization partner's contribution to the corporations. The final policy could well standardize the kind of support that would emanate from the private organization partners as minimum conditions. The advantages associated with this policy shift is that the private organization will not depend entirely on the state to fund future project sustainability, while the risk may well be closing out many local community organisations or individuals for fear of not being able to attract private funding.

The classifications of PPP models as well as international experience illustrates PPPs as long-term initiatives as the real value of the cooperation is delivered over time. The inevitability of risk sharing between both the state-run and private organizations is common in PPP arrangements. Under the LUI program (DEA, 2013) it appears that Natural Resource Management appoints an Implementing Agent to clear invasive alien plants in a region or part thereof. Contrary to the draft policy proposals, the implementing agent then negotiates with landowners to conclude what is termed landowners contract. Considering that NRM signs 3 year contracts, which can possibly be renewed subject to reapplication and approval with its implementing agents, its long-term sustainability to clear initiatives is questionable because the implementing agents may not be available for future enforcement of the so-called landowners' contracts. Therefore, if the LUI is structured in the contract management model, the implementation phase may take approximately five years, a term long enough to monitor and assess.

In order to be able to manage the problem of invasive alien plants effectively, this may require long-term impact driven intervention. The challenge is that most landowners whose land is invaded by these invasive alien plants lack the financial muscle to tackle this problem consistently over a one-year period which can prove to be sufficient to notice changes. Furthermore, predicting follow-up control strategies for disturbed areas are often difficult due to the same reason. Therefore, it is contended that a PPP is a vehicle best suited to address the challenges faced by landowners, while state-run organizations focus on its key mandate to create a platform for small SMMEs to flourish through partial funding.

5.5 Conclusion

This chapter managed to present detailed assessments of inputs received from the different respondents. It can be concluded that there is a recognition of the value of the LUI and that despite not an approved or official policy, it has potential to be implemented along the PPP model.

It should be noted that from the results of the engagements, there is, to a limited extent, suggestion that the LUI can be positioned as a fully-fledged PPP initiative. The costs associated with the implementation of the LUI program appear to be competitive compared to direct implementation, which is a key consideration in PPPs. However, the argument that private parties will contribute in kind cannot be considered as a partnership. There is a potentially lucrative private sector investment that remains untapped. Tapping into such funding will require a model formally acknowledged and within the regulatory framework of the country, for example, a PPP. The contract management model presents an opportunity to structure the current LUI program (DEA, 2013). There is an agreement that the LUI can be customised to the management of natural resources and can add value to the work of the department and benefit those participating in the project directly and indirectly.

Chapter 6 below dispenses a widespread conclusion of the research. The findings are summarized and recommendations provided for consideration when engaging private sector funding through PPPs. In conclusion, the section will summarize the objectives of the research and the research questions.

CHAPTER 6: SUMMARY AND RECOMMENDATIONS

6.1 Introduction

In the preceding chapters, the concept of PPPs; South African regulatory foundation; Groot Marico identified as the case study; and the findings on the Land Users Incentive program were described. The LUI was interpreted as a possible PPP initiative customised to the management of natural resources.

The present section winds up the research by summarising the research findings in relation to the research objectives and the survey conducted. The study further recommends factors for consideration when engaging private organizations' investment for growth and maintenance of ecological infrastructure assets in Natural Resource Management.

6.2 Summary of findings per research objective

a) *To explore and understand the concept of PPP both locally and internationally through its successes in the built and health sector.*

The historical overview of PPPs revealed that they were adopted by governments in the early 1990s. Since these PPPs were not developed in unison, various models exist. Moreover, some are even being currently developed innovatively. Although the initial focus of PPPs was on construction and management of built infrastructure, the research revealed that there has been a paradigm shift which has seen PPPs being utilised for a wide range of services widely recognised as government responsibility.

Since there is no single concise definition that has been agreed upon, there are key points which frequently arise in the various definitions of PPPs. All the definitions refer to an agreement connecting state-run and private organizations as well as the supply of communal amenities. The variances and most important aspects highlighted in the reviewed literature included funding, ownership, operational risk and various management responsibilities associated with the contract. This is significant because each of the PPP contracts adopt one or more of these variances. Contract management proved to be the relevant model for structuring the LUI into a formal PPP within NRM.

b) *To describe the regulatory framework of PPPs in South Africa.*

The South African regulatory foundation shares the same sentiments in relation to globally recognised variances of PPPs. It is conceded that the private organizations shall get to perform a state-run organization's function on behalf of that organization and assume substantial monetary, technical and performance risk in connection with the execution of that function.

Private organizations' actions and PPPs may be categorised into two, namely: trading transactions driven by trade stimulus, developed as part of company's growth business and trade plan, which nonetheless have unassailable ramifications for growth. Furthermore, these may be specifically arranged as new efforts to apply organizations' principles and approaches to growth problems. Taking these into cognisance, the regulatory framework describes an approval process that should be followed when entering PPP arrangements to balance the state-run organizations benefit with private organizations market stimulus.

In carrying out its organizational function which includes, amongst others, the clearing of invasive alien plants, the Department of Environmental Affairs through its Natural Resource Management Branch, introduced the LUI program. This program endeavours to pull resources together including private and state-run organizations whose roles and responsibilities are clearly articulated in the PPP model prevalent from those presented in this research.

c) *To critically analyse the proposed LUI as a PPP initiative for NRM*

The LUI was examined in detail to establish whether it can be placed as a PPP type arrangement. It was revealed that the initial intention of the LUI was to facilitate the possession of the control of invasive alien plants by the landowners. Cost sharing was proposed between land-owners and NRM to clearing invasive alien plants. The cost analysis presented in this study revealed that the implementation of clearing operations using the LUI reduced costs drastically. This is attributed to sharing costs as opposed to the government being the sole funder.

Goodall and Naude (1998: 118) advanced the argument that ecosystems disturbed by clearing operations will be susceptible to re-invasion. Consequently, it is essential that landowners understand that costs are borne in clearing invasive plants and they are

expected to make an undertaking to manage these localities. The LUI took cognisance of the National Environmental Management and Biodiversity Act (10 of 2004) (RSA, 2004) regulations which grant State notable competence to influence land owners to undertake management of invasion of alien plants on their natural assets. Part of the stimulus is that land owners would be held solely responsible for repeat invasions after the natural asset has been cleared through the program. The draft LUI policy further outlined the general responsibilities that would be jointly shared between NRM and the land-owners.

The implementation of the LUI would not only focus on clearing invasive alien plants but also attempt to contribute towards the government-wide program of addressing social challenges, for example, poverty and unemployment. As a result, the draft policy adopted the Expanded Public Works Program guidelines to ensure that the clearing projects are as labour intensive as possible.

The study revealed that despite the good intentions and implementation being in progress, the LUI policy is a draft and has not yet been developed into a working policy. The study also revealed that the implementation of the draft policy is in excess of two years which is an important factor which must be pursued. The question is how many of such policies are being implemented as drafts before they are finally approved. There is no doubt that the return on investment realised through land handed back to owners free of invasive alien plants has been realised on these projects. The survey revealed that the longer duration associated with implementation of the LUI had positive socio-economic benefits in that the financial standing of the beneficiaries improved along with their general standard of living.

In relation to various models of PPPs which currently exist, the LUI has been found to be a ‘mock-up’ of the PP Contract Management model. This implies that should NRM wish to utilize the LUI as a PPP arrangement, its approval should be subjected to that of National Treasury as prescribed by the regulatory framework.

The study also revealed that the implementation of a labour-intensive LUI at the study area implied the provisions of much needed employment opportunities, improvement in agricultural production, and ultimately raise of the local economy. This would simultaneously contribute towards the community’s efforts to conserve the natural and cultural history of the Groot Marico, reduce crime and convert the area into an ideal ecotourism destination.

d) To provide program managers insight into factors for consideration when engaging private investment through PPPs in Natural Resource Management.

This section seeks to provide recommendations on what needs to be considered in engaging private players in the implementation of PPP in the NRM. Section 6.3 below will provide details in this regard.

6.3 Recommendations

As the last objective of the study was to give program managers insight into the factors for consideration when engaging private investment through PPPs in natural resource management, the following recommendations are provided:

- Since PPPs have proven to be a viable procurement option through its successes in other public services, it is recommended that NRM follows due processes to have the LUI policy approved. Contract management is the recommended model to structure the LUI as a PPP arrangement. This would imply following steps for phases 1, 2 and 3 approvals as prescribed by Treasury Regulation 16 to the Public Finance Management Act (1 of 1999) (RSA, 1999).

- Business for Social Responsibility (BSR) (2013:8) argues that the predicament confronting private organizations managers is the unavailability of widely agreed-upon, coherent recommendations on specified yardstick to track, measure, and appraise environmental amenities pay-offs and dependencies. Moreover, there is no ideal way to map present private organizations environmental assessment processes and protocols. Furthermore, private organizations have no guidance to contemplate counterbalance collaborators petitions to prioritize specific environmental amenities over others. Private organizations' -tailored operational guidance on environmental amenities is in the growth stage as the domain business implementation come to light. Therefore, structuring the LUI within a PPP model will address certain challenges through formal agreements recognized by prevailing legislative framework aligned to significant water catchment areas, which is a government priority.

  The United Kingdom's Private Finance Initiatives (PFIs) case has proven that the private organizations want value for money or rather substantial return on investment whenever they invest in communal commodities and amenities. This in turn has proven

to be expensive and failed to deliver higher returns for the state-run organizations involved. To inhibit this, the LUI should consider using environmental amenities as the private organizations return on investment. For instance, private investors may be granted exclusive rights to charge ecological infrastructure asset users a specific contracted period in return to maintain and/or restore the ecological infrastructure asset to levels determined by NRM.

In the case of the Marico Eye as an ecological infrastructure asset, the private investor may fund the clearing of invasive alien plants along the Marico River in return for chargers levied to users of the Marico Eye, for instance, divers. Environmental commodities and amenities are intrinsically communal in nature, hold all the conditions and processes through which natural environment and the species which it comprises, sustain and fulfil human life. Environmental commodities and amenities provide benefits to community as a whole, over and above the benefits to individuals. Wilson and Howarth (2002: 432) cited Jacobs (1997) that ‘‘community is better off for having them, even if the number of individuals who privately benefit from their existence is very small’’. This study recommends that this can be achieved through a sound collaboration connecting state-run and private organizations.

Considering the current economic outlook, possible budget cuts are foreseen or rather inevitable and this will obviously diminish NRM’s outreach. In this instance, degradation will continue to cripple the state of the ecological infrastructure assets for as long as NRM’s outreach is constrained by financial resources.

- Le Maitre, van Wilgen, Gelderblom, Bailey, Chapman and Nel (2001:14) cited van Wilgen *et al*. (1998) and Working for Water (1999) that one of the considerable inducement for the invasive alien plants management program is its victory in accomplish its communal ambitions through employment generation. For that reason, the major derivation of revenue for the program is state and contributors to poverty-relief funds. The program come across to dispense jobs to multitudes previously jobless South Africans. The program undertook a gender based approach with primary focal point to youth, women, and individuals living with disabilities, single parent’s household, training and environmental awareness. This focal point signifies the exploits of jobs are carried beyond mere job creation towards community betterment. Therefore, a unique opportunity lies in the fact that this form of skills development takes the role of or could be toned as a rural university and add value to the broader

qualifications and skills needed by the natural resource management economy. Such benefits are arduous to appraise in fiscal expression.

The study revealed that the LUI, as currently constituted, also does not exonerate NRM from the risk of implementing agents failing. The notion that substantial risk is transferred to the implementing agent is inconsistent with that of partnerships being forged with the land-owners. As a result, the risk still remains with NRM as the primary financier of the clearing projects. By using the private sector as the primary financier, the issue of operational risk would be addressed. Furthermore, NRM would be solely responsible to manage the performance of the implementing agent.

- Since access to ecosystem services is every citizens right as enshrined in the Constitution (RSA, 1996), attempts to implement the LUI as a Co-operative Arrangement type of PPP will require extensive public consultation. NRM should consult widely on this proposal to avoid a possible public uproar.

  When presenting the proposed model to the public, NRM should focus on the economic value the program will add, and on the environmental and social values. The possibility of such an alignment between social and commercial interests has over the years remained largely unexploited. Certain evidence has revealed that when individuals are more materially secure, they are likely to care about the environment Rangel (2003) cited by Gowdy and Salman (2011:9). Development policies which focus on the subjective well-being might thus pay a double dividend. People would not only be happier but they would also be more willing to support efforts to conserve environmental services.

6.4 Conclusion

In conclusion, sound measures which contribute towards human well-being are required. However, yardstick of tangible and biotic demand for long lived individuals' continuation are also required. The good fortune of the worlds' impoverished hang immensely on the unswerving amenities of environment and on sustaining such environmental performances. These environmental performances are under risk from global habitat transformation as well as insufficient state organizations responses to these transitions (Gowdy & Salman, 2011:9). Although the focus was on the Groot Marico as a case study for the LUI, the findings are likely to be the same across the country because the latter is a national program.

Future studies should focus on the overall implications of the introduction of the LUI, as the Natural Resource Management's very own PPP initiative might be on the general public in relation to free access to ecosystem services. Other studies may centre on the future role of both state-run and private organizations whose current role is to advocate and conserve ecological infrastructure assets for the benefit of all.

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Annexure 1: LUI Socio-economic questionnaire

Land User Incentive (LUI) Socio-Economic Questionnaire

Confidentiality Clause

This questionnaire is strictly academic, there are no risks associated with participating thereof. Participation is voluntary and there are neither benefits nor penalties for participating or not participating in this study. The information you provide is confidential and will only be used for academic purposes.

Each individual is required to answer two parts only, i.e. Part 1 and either one of the remaining parts based on the response to question 1.5 below. Kindly tick or mark with an X the appropriate response.

PART 1: DEMOGRAPHIC INFORMATION

1.1 Gender	Male	
	Female	

1.2 Age group	15 - 35	
	35 - 60	
	Over 60	

1.3 Level of education	Primary school	
	Senior certificate/matric	
	National Diploma/ Degree	
	Honours, Masters or PhD	

1.4 How long have you been staying in the Groot Marico?	Less than 5 years	
	5 - 10 years	
	10 - 15 years	
	Over 15 years	

1.5 In what form are you participating in the LUI programme?	Land Owner (Answer Part 2)	
	Project Manager (Answer Part 3)	
	Employee (Answer Part 4)	

PART 2: LAND-OWNER QUESTIONS

2.1 How did you learn about the Land User Incentive Programme?	Media		(specify).....
	Through other Land owners/users		
	Own initiative		(specify).....

2.2 Do you have an agreement with the Department of Environmnetal Affairs in relation to the LUI?	Yes	
	No	

2.3 Is there clear breakdown of roles in terms of the agreement?	Yes	
	No	
	N/A	

2.4 What is your role in the project?
(specify).....

2.5 What are the future plans in terms of the agreement (what happens after completion of the project)?
(specify).....

2.6 Who is funding the project?	DEA	
	Land Owner	
	Both	
	Don't know	
	Others (specify)	

2.7 What are the benefits assciated with the project?
(specify).....

Thank you for your participation

PART 3: PROJECT MANAGERS QUESTIONS

3.1 How did you learn about the Land User Incentive Programme?	Media		(specify).....
	Through others		
	Own initiative		(specify).....

3.2 What is your professional relationship with the Department of Environmental Affairs (DEA)?	Employee	
	Service Provider	
	Other	

3.3 If service provider, are you registered in the DEA database of service providers?	Yes	
	No	
	Don't know	
	N/A	

3.4 Did you undergo any special training to become a project manager?	Yes	
	No	

3.5 Who funded the training?	DEA	
	Own funds	
	N/A	
	Others.....	

3.6 What does it take to be a project manager?	Experience	
	Training	
	Both	
	Others.....	

3.7 What is your overall role in the project?
(specify).....

Thank you for your participation

PART 4: EMPLOYEES QUESTIONS

4.1 How did you learn about the Land User Incentive Programme?	Media		(specify).....
	Through others		(specify).....
	Own initiative		(specify).....

4.2 How did the employment came about?	I applied	
	I was hand picked	
	Other.....	

4.3 Did you undergo any skills training in order to participate in the programme?	Yes	
	No	

4.4 Do you have dependants?	Yes	
	No	

4.5 Did your participation in the programme improve your financial standing in the community?	Yes	
	No	

4.6 Would you consider the programme as a long term employment? Motivate your answer	Yes	
	No	

Thank you for your participation

Annexure 2: Key informants interview guide

KEY INFORMANTS INTERVIEW GUIDE

1. Is the Land User Incentive an approved policy for NRM?
   YES
   NO

2. If NO, for length of time will it be implemented as a policy which is still to be approved?
   ……
   ……

3. How is the Land User Incentive any different to the normal procurement process?
   ……
   ……

4. Would you say the Land User Incentive is a Public Private Partnership initiative for NRM?
   YES
   NO

5. If YES, was approval sought from the National Treasury to utilise the Land User Incentive as a policy position for NRM?
   YES
   NO

6. How has the use of Land User Incentive improved the performance of NRM in general?
   ……
   ……

THANK YOU